CIVIL ENGINEERING AND ARCHITECTURE	
Cycle	**XXXII**
Duration	3 years
Coordinator	Prof. Andrea CARPINTERI – Department of Civil and Environmental Engineering and Architecture email: andrea.carpinteri@unipr.it
Research Topics: (the applicant must indicate only ONE research topic between these 4 topics)	• Infrastructure and Environmental Engineering • Structural and Geotechnical Engineering • Architecture and Urban Planning • Computational Fluid Dynamics
Training objectives	To develop specialized skills in the following fields: 1) civil infrastructures for transport; survey, management, and analysis of land data, control and monitoring of displacements and deformations at all scales; issues related to surface waters and groundwaters; 2) mechanical behaviour of materials, structural components and structures; behaviour of soils and geotechnical structures; 3) theoretical, formal, distributional and functional aspects in architecture; the problems related to methods for survey and to computer-graphics in architecture; issues related to the implementation and the development of urban settlements; historical, artistic, technical and aesthetic themes in the architecture of the past; 4) numerical modelling of free surface fluids. A parallel numerical scheme for flood simulation will be developed, which will be able to exploit modern heterogeneous high performance computing architectures, such as Graphic Processing Units (GPU).
Academic degree required	Laurea pursuant to the previous university system, laurea specialistica or laurea magistrale, or a foreign academic qualification that has been recognized as equivalent.

POSITIONS PUT OUT TO COMPETITION	
With Scholarship	7
Without Scholarship	1
Reserved to employees of companies having a "Industrial Engineering Doctorate" arrangement	1
TOTAL	**9**

KIND OF SCHOLARSHIP		
N°	*Funding entity*	*Research Topic, if any*
3	Scholarship Ministerial funds	--
1	Scholarship University funds	--
1	Funded by Department of Department of Civil and Environmental Engineering and Architecture	--
1	Funded by Department of Department of Civil and Environmental Engineering and Architecture – Funds SIR within the project RBSI14R1G "FLOOD risk management based on PARallel numerical simulations"	• Computational Fluid Dynamics
1	Co-funded by Fondazione Cariparma	--

Positions reserved to employees of companies having a "Industrial Engineering Doctorate" arrangement	
N°	***Company***
1	AUTOVIE VENETE S.p.A.

ADMISSION PROCEDURES	
Assessment of QUALIFICATIONS: up to 60 points (a minimum score of 10 points shall be required to be admitted to the Written Exam) **WRITTEN EXAM:** up to 60 points **Minimum score for ELIGIBILITY**: 70/120	
Foreign Language	Language the fluency of which shall be assessed during the Written Exam: **ENGLISH**. The evaluation of the knowledge of this language will be written/oral and will consist in traslating of a scientific text.

LIST OF QUALIFICATIONS TO BE SUBMITTED AND THEIR ASSESSMENT		
Graduation thesis	Abstract of the graduation thesis (**mandatory qualification**)	**Up to 5 points**
Graduation mark	Score related to the final mark: - 110 with honours (magna cum laude): 15 points; - 110: 13 points; - From 105 to 109: 10 points; - From 100 to 104: 5 points; - Under 100: 0 points	**Up to 15 points**
Average of the exam marks **(if the candidate will attain the degree no later than 31 October 2016)**	Score related to the average of the exam marks: - 30/30: 15 points; - From 29/30 to 29.99/30: 13 points; - From 28/30 to 28.99/30: 10 points; - From 27/30 to 27.99/30: 5 points; - Under 27/30: 0 points	**Up to 15 points**
Curriculum Vitae et studiorum and other qualifications	Including academic career and postgraduate experience, accompanied with a statutory declaration in lieu of the certification of the exams passed with the relevant marks, as well as the final graduation mark (**mandatory qualification**)	**Up to 10 points**
Research Project	The research project shall consist of a maximum of 3 pages, be written in Italian or in English, focus on an original research topic and it shall be structured as follows: introduction of the problem in the scientific context, significance of the problem, expected results, argumentation. It shall amount to no commitment on the subsequent choice of the doctoral thesis	**Up to 10 points**
Scientific pubblications	Articles on national and international journals, papers presented at conferences or symposia, book chapters etc.	**Up to 15 points**
Other qualifications	Awarding of Scholarships, prizes, trainings, etc.	**Up to 5 points**

SCHEDULE OF THE ADMISSION EXAMS	

WRITTEN EXAM	**WRITTEN EXAM DATE**: 21 September 2016
	TIME: 10:00am
	PLACE: Department of Civil and Environmental Engineering
	      and Architecture
	      Parco Area delle Scienze, 181/A – 43124 PARMA, ITALY

Written Exam topics	The Written Exam will focus on general concepts in the context of: 1) civil infrastructures for transport; survey, management, and analysis of land data, control and monitoring of displacements and deformations at all scales; issues related to surface waters and groundwaters; 2) mechanical behaviour of materials, structural components and structures; behaviour of soils and geotechnical structures; 3) theoretical, formal, distributional and functional aspects in architecture; the problems related to methods for survey and to computer-graphics in architecture; issues related to the implementation and the development of urban settlements; historical, artistic, technical and aesthetic themes in the architecture of the past; 4) numerical modelling of free surface fluids. Flood simulation in order to exploit modern heterogeneous computing architectures high performance.
OTHER INFORMATIONS	In the application to participate in the competitive examination, the candidate must choose and specify only ONE research topic (between the 4 possible topics), and the candidate must perform the written exam on the chosen research topic. In the case of admission to the doctorate program, the above choice will be binding with regard to the winner's research activity. The Written Exam must be performed in Italian.