

## Engineering Sciences

<b>Cycle</b>	XXXVIII
<b>Director</b>	Prof. Stefano Trillo – Dipartimento di Ingegneria – <a href="mailto:stefano.trillo@unife.it">stefano.trillo@unife.it</a>
<b>Duration</b>	3 years
<b>Curriculum</b>	1. Civil Engineering 2. Industrial Engineering 3. Information Engineering
<b>Research Topics</b>	<a href="http://www.unife.it/studenti/dottorato/corsi/riforma/ingegneria">http://www.unife.it/studenti/dottorato/corsi/riforma/ingegneria</a>
<b>Qualification required for admission</b>	LM-4, LM 4 CU; LM-17, LM-18, LM-19, LM-20, LM-21, LM-22, LM-23, LM-24, LM-25, LM-26, LM-27, LM-28, LM-29, LM-30, LM-31, LM-32, LM-33, LM-34, LM-35, LM-40, LM-43, LM-44, LM-48, LM-53, LM-54, LM-66, LM-69, LM-71, 20/S, 23/S, 25/S, 26/S, 27/S, 28/S, 29/S, 30/S, 31/S, 32/S, 33/S, 34/S, 35/S, 36/S, 37/S, 38/S, 45/S, 50/S, 54/S, 61/S, 62/S, 81/S, 82/S, equivalent Italian degree Lauree V.O. in Engineering, Physics and Information Technology or an equivalent foreign academic qualification awarded abroad.

**Available Positions (total)**

**14**

### Assessment Criteria

**Evaluation of qualification:** maximum score 50 points. Minimum score required to be admitted to the interview 35/50 -

**Interview:** maximum score 30 p.ts (including the foreign language examination). **Minimum final score required: 60/80**

During the interview, the applicant's knowledge of the following languages will be tested:

English

### List of documents for the evaluation

<b>Curriculum vitae et studiorum</b>	<p><b>Mandatory documents:</b> Full academic career information (Bachelor and Master degree), a list of examinations and grades and final mark, for Bachelor and Masters degrees, and post degree experience. Thesis abstract (max length 2 pages), with the following structure: motivation, research methodology, obtained or expected results and bibliography. Only for undergraduates students the abstract must be signed by the supervisor.</p>	Up to 20 points
<b>Research Project</b>	Maximum length: 3 pages - in English or in Italian which must contain an original proposal for a research project, with the following structure: introduction to the scientific international context, relevance of the topic, expected results, argumentation. The proposed research project is not binding with regard to the subsequent topic that will be carried out during the three year course.	Up to 20 points
<b>Scientific publications</b>	Abstracts and/or papers presented to meetings or congresses <b>OR</b> File containing the full list of the publications with associated link.	Up to 5 points
<b>Statement of research interest</b>	Short text - maximum length: 1 page -in English or in Italian, which must contain the motivations to attend the Ph.D. programme and the candidate's specific research interests.	Up to 3 points
<b>Other professional or academic qualifications</b>	Academic, professional qualifications; language certificates.	Up to 2 points

### Interview

Presentation of the proposed research project and the Candidate's linguistic skills will be verified.

### Examination Timetable

Evaluation of qualifications and interview will take place within the 16<sup>th</sup> of September 2022. Evaluation results may be checked at the following link: <http://www.unife.it/studenti/dottorato/concorsi/selection>.

The beginning date for consulting the evaluation results and the interview schedule will be available within the present call deadline at the following page <http://www.unife.it/studenti/dottorato/concorsi/commissioni>.

<b>Available Positions and kind of financial support</b>		
<b>N°</b>	<b>Kind of Financial Support</b>	<b>Research subject</b>
5	Università di Ferrara	
1	Co-financed by Dept. of Engineering and Università di Ferrara	
1	Co-financed by Dept. of Engineering and Università di Ferrara	Development of 0D/1D modeling methodologies for the dynamic analysis of lubrication circuits for agricultural applications
1	Co-financed by Dept. of Engineering and Università di Ferrara	Behavior analysis of people and things via wireless networks
1	Agreement with LTE (Intersectorial Doctorate) Reserved positions for employees engaged in high qualified research activities.	On the prognostics of mechanical system with low dynamic data
1	In collaboration with Universidad Politecnica Salesiana of Ecuador – UPS (reserved for Candidates holding a scholarship with Institutions linked to specific projects for Cooperation Development	
2	Positions reserved to candidates belonging to specific categories	Reserved positions for candidates holding a foreign government scholarship or a scholarship funded by international mobility programmes

<b>Positions deriving from DD.MM. 351/2022 and 352/2022</b>		
<b>N°</b>	<b>Kind of Financial Support</b>	<b>Research subject</b>
1	D.M. 351/2022 (Public Administration line of investment - M4C1 I. 4.1)	Scalable, probabilistic and explainable Machine Learning for Big Data
1	Co-financed by Università di Ferrara – Fondi D.M. 352/2022 - M4C2 I. 3.3 e Toyota	Development of neural networks for perception sensing and data fusion to support autonomous driving systems in outdoor industrial environments
1	Co-financed by Università di Ferrara – Fondi D.M. 352/2022 - M4C2 I. 3.3 e MechVib Engineering srl	Development of zero-defect manufacturing methodologies for the quality control of processes and products in a zeroing wastefulness scenario
1	Co-financed by Università di Ferrara – Fondi D.M. 352/2022 - M4C2 I. 3.3 e MEC	Transceiver Design for X-band Digital Beamforming Synthetic Aperture Radar Systems