INDUSTRIAL ENGINEERING	
Cycle	XXXVI
Coordinator	Prof. Gianni ROYER CARFAGNI Department of Engineering and Architecture email: gianni.royer@unipr.it
Duration	3 years
Starting date of the PhD program	01/11/2020
Partner Institution for University Cooperation Agreements	• Universidade Federal de Santa Caterina (Brazil)
Participation with positive results in international calls	**PROJECT UE H2020 – MSCA ITN "Innovation Training Networks" INT-ETN "HiStabJuice" project 956257** • Influence of thermal and non-thermal treatments on selected nutrients and the antioxidant capacity of fruit juices and nectars (at the CFT Group company) • Influence of thermal and non-thermal treatments on the shelf-life of fruit juices and nectars (at the SSICA research center)

Research Topics

- Theoretical and applied mechanics, mechanics of materials and structures, construction of machinery
- Economic, organizational, managerial, plants and legal aspects in the field of engineering
- Energetic systems, thermodynamics and fluid dynamics, machinery and energy systems, technical physics

Training Objectives

The Industrial Engineering PhD program aims to give participants a deep knowledge in the main topics relevant to industrial engineering. The PhD course presents numerical, analytical and experimental techniques, in order to face any technical or scientific problem of the industrial engineering, with managerial skills, to provide autonomy in work and readiness of inclusion in a collaborative environment with other researchers and technicians. The internationalization phase envisaged in the three-year curriculum allows to forge links with other foreign reality by providing the PhD an additional tool to get into a scientific context not just limited to national borders.

Admission requirements

Regardless of age and citizenship, applicants holding at least one of the following academic qualifications can apply for admission:
- Laurea specialistica or Laurea magistrale (second cycle master's degree)
- Laurea Vecchio Ordinamento (degree obtained under the previous Italian regulations);
- Second cycle Master's degree obtained abroad, equivalent to the above mentioned Italian degrees and recognized as suitable for the admission to doctoral program

Undergraduate applicants may also submit applications with the obligation of getting their degree by **October 31st 2020.**

POSITIONS PUT OUT TO COMPETITION	
With Scholarship	6
Without Scholarship	1
Reserved to employees of companies having an "Industrial Doctorate" arrangement	2
TOTAL	**9**

Positions with University Scholarship		
N°	*Funding entity*	*Research Topic, if any*
3	Scholarship Ministerial funds	---
1	Scholarship University funds	---
1	Scholarship co-funded by Fondazione Cariparma	---

Position with Scholarship LINKED TO SPECIFIC TOPICS (art. 11 of the Call for applications)

During the Oral Exam, applicants may express their interest in being assigned a scholarship dedicated to a specific research topic to the Examination Board. The Board will express its judgement on eligibility to be assigned the scholarship in consideration of the specific competences, experience and specific aptitudes of the applicants.

N°	*Funding entity*	*BOUND RESEARCH TOPIC*
1	Funded by Motesque GmbH Co. KG	• Multi-flexible-body methods for the simulation of the human body interaction in biomechanism"

Position reserved for "Industrial Doctorate"
(according to art. 2 paragraph 2, lett. e) of Ministerial Decree n. 45/2013)

N°	*Company/Institution*
1	Reserved to employees of Flowserve S.r.l.
1	Reserved to employees of Murata ID Solutions S.r.l.

ADMISSION PROCEDURES

Assessment of QUALIFICATIONS: up to 70 points
(a minimum score of 40 points shall be required to be admitted to the Oral Exam)
ORAL EXAM: up to 50 points
Minimum score for ELIGIBILITY: 70/120

Foreign Language	Language the fluency of which shall be assessed during the Oral Exam: **ENGLISH**. The evaluation of the knowledge of this language will be oral and will consist in reading and translating of a scientific text.

APPLICANTS SHALL TAKE THE EXAM REMOTELY.
For further details please refer to the relevant provision laid down in art. 4 of the Call for applications**.**

THE INTERVIEW MAY BE HELD ALSO IN ENGLISH

LIST OF QUALIFICATIONS TO BE SUBMITTED AND THEIR ASSESSMENT

Mandatory documents to be attached to the on-line application

− **ANNEX A** (art. 5 of the Call for Applications)
− Scanned Copy of a **valid identification document** with photo
− **Curriculum Vitae et studiorum** (art. 4 of the Call for Applications)
− **Abstract of the second cycle master's degree thesis.** Undergraduate applicants may submit the draft of the thesis approved by their supervisor (abstract/draft of the thesis: 10.000 characters including spaces)
− **Certificates and academic transcript of records for both Bachelor' and Master' degrees** containing the following details for each degree held: (art. 4 of the Call for Applications):
  o University that granted the degree
  o Type of degree (first cycle/second cycle/single cycle)
  o Name of the degree program
  o Date of graduation
  o Final mark
  o List of exams and corresponding scores (academic transcript of records)
  o Translation into Italian or English (only for degrees issued in languages other than Italian or English)
− **Research Project:** The research project shall consist of a maximum of 3 pages, be written in Italian or in English, focused on an original research topic **(unpublished, developed personally by the candidate. It should be noted that the Examination Board can use of IT tools useful for verifying the originality of the submitted Project)** and it shall be structured as follows: introduction of the problem in the scientific context, significance of the problem, expected results, argumentation. To identify the topic of the aforementioned project, the candidate may contact one of the Members of the Academic Board (available at: https://dia.unipr.it/it/node/2834). The project <u>does not represent a constraint with respect to the following choice of the doctoral thesis</u>, that shall be defined together with the supervisor and approved by the Academic Board.

Further qualifications that may be attached to the application, if in possession of the applicant
(only qualifications attested by a document drawn up in Italian or in English)

− **Statement of Research Interest:** Short text – maximum 1 page – in Italian or in English, aimed at explaining the candidate's reasons to attend the PhD program and at describing the specific her/his research interests;
− **Scientific Publications:** Articles on national and international journals, contributions presented at conferences or symposia, book chapters. It is necessary to attach a copy to online application;
− **Reference Letters:** a maximum of 2 written by professors or researchers at the University of origin of the candidate or from other universities or from experts in the research areas working in public or private research facilities;
− **Any other document** certifying the applicant's traning and abilities (other Master's and/or specialization degreee in subjects consistent with the research topics of this PhD program, mobility experience abroad, grants, awards, interships etc.).

EVALUATION CRITERIA

QUALIFICATION	EVALUTATION CRITERIA	POINTS
Curriculum Vitae et studiorum	Including academic career and postgraduate experience, accompanied by a statutory declaration in lieu of the certification of the exams passed with the relevant marks, as well as the final graduation mark	**Up to 15 points**

Graduation mark	Score related to the final mark: - 110 with honours (magna cum laude): 10 points; - 110: 8 points; - From 105 to 109: up to 6 points; - From 100 to 104: up to 3 points; - From 66 to 99: 0 points The scores will be proportionally renormalized in case of equivalent evaluations	**Up to 10 points**
Average of the exam marks (if the candidate will attain the degree no later than 31 October 2020)	Score related to the average of the exam marks: - 30/30: 10 points; - From 28/30 to 29/30: up to 5 points; - From 26/30 to 27/30: up to 3 points; - From 18/30 to 25/30: 0 points; The scores will be proportionally renormalized in case of equivalent evaluations	**Up to 10 points**
Graduation thesis	Consistency of the Master's Degree thesis with the doctoral program research topics	**Up to 10 points**
Research Project	Consistency of the Research Project with the doctoral program research topics	**Up to 15 points**
Statement of Research Interest	Evaluation of the candidate's motivations to attend the doctoral course and congruity of the research interests with the research topics of the doctoral course.	**Up to 5 points**
Scientific publications	Articles on national and international journals, contributions presented at conferences or symposia, book chapters. It is necessary to attach a copy to online application	**Up to 5 points**
Reference Letters	a maximum of 2 written by professors or researchers at the University of origin of the candidate or from other universities or from experts in the research areas working in public or private research facilities	**Up to 5 points**
Other qualifications	other Master's and/or specialization degreee in subjects consistent with the research topics of this PhD program, mobility experience abroad, grants, awards, interships etc	**Up to 5 points**
ORAL EXAMINATION	**EVALUATION CRITERIA**	**POINTS**
The ORAL EXAM includes the presentation of the research project and is intend to assess the suitability of the applicant to pursue scientific research as well as the general knowledge of issues connected to the PhD course	o research project presentation o general knowledge of issues connected to the PhD course o knowledge of foreign languages	**Up to 50 points**

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SCHEDULE OF THE ADMISSION EXAMS		
ORAL EXAM	**DATE**	14 September 2020 (with possible extension in the following days)
	TIME	09:00 am (Italian time)
	PLACE	remotely using the **Microsoft Teams platform**
OTHER INFORMATIONS		For foreign candidates, the admission examinations may be held in English at the candidate's choice. All candidates must enclose a form indicating the email to which the Examination Board will send an invitation for the oral test on the Microsoft Teams platform.