

# Academic Cooperation Agreement Politecnico di Bari (Italy) – Université de Lorraine (France)

## Double Degree in Computer Engineering Selection of candidates

For the Academic Year 2020/21, Politecnico di Bari will select up to ten students that wish to attend the Double Degree program in Computer Engineering, established in partnership with Université de Lorraine (France):

- 1) “Master Diploma in Cognitive Sciences (Master Sciences Cognitives) – curriculum: Cognitive Sciences, Interaction and Artificial Intelligence” + “Laurea Magistrale in Ingegneria Informatica (Master Degree in Computer Science Engineering) – curriculum: Information Systems or curriculum: Productive Systems”;
- 2) “Master in Natural Language Processing (Master TAL) – curriculum: Natural Language Processing” + “Laurea Magistrale in Ingegneria Informatica - curriculum: Information Systems or curriculum: Productive Systems”.

The commission in charge of the selection procedure will be appointed by the Director of DEI.

Mandatory requirements for applicants are:

- to be enrolled at “Corso di Laurea Magistrale in Ingegneria Informatica”
- Minimum Level in English language equal to B2

or

1. to be enrolled at “Corso di Laurea in Ingegneria Informatica e dell’Automazione”
2. to have an average weighted rank not less than 24/30;
3. to have passed at least 150 ECTS.
4. Minimum Level in English language equal to B2.

List of selected candidates is done by summing:

- the graduation rank achieved with the Bachelor degree, expressed in /110, (for graduate applicants);
- the average weighted examination ranks, expressed in /30, multiplied by 4 (for undergraduate applicants);
- evaluation of the Curriculum Vitae et Studiorum (up to 6 points).

Important dates

- Within **November 30th**, applicants should submit the filled in and signed annex to the Registry Office (Ufficio Protocollo) of the DEI Department:
  - by hand delivery, Mr. Davide Perillo, Department DEI, 1st floor, or
  - by e-mail, at the address: [mariagrazia.dotoli@poliba.it](mailto:mariagrazia.dotoli@poliba.it) (DD academic coordinator).

**Only applications submitted using the institutional e-mail system are accepted.**  
The application **must be listed in the list of sent e-mails in the applicant’s POLIBA webmail interface**, as a valid proof of sent application.

Applications received by the Department after October 30th will not be taken into consideration.

- The list of admissible candidates will be published on the website of the DEI Department, [dei.poliba.it](http://dei.poliba.it). Candidates will not be personally contacted to notify the result of the selection.
- Within one month from the publication of the list of the selected candidates, applicants should present a personalized study program, according to the annex of the Double Degree agreement and to the current teaching programs at Politecnico di Bari and Université de Lorraine. The study program should encompass at least two semesters, and can include the master thesis at

the partner institution, co-tutored by a professor or researcher from Politecnico di Bari and by a professor or researcher from Université de Lorraine. The programs will be validated first by Dipartimento di Ingegneria Elettrica e dell'Informazione - (DEI) and then by the Université de Lorraine (France).

#### Further information and requirements for selected students

1. Students selected for the DD program will not automatically receive a financial grant to cover the costs of the mobility (travel, accomodation, etc.). They can participate in the selection for the award of an Erasmus+ Grant for Student Mobility (Erasmus+ SMS Grant).

2. Regardless of the actual award of an Erasmus+ SMS Grant, students participating in the DD program must perform the mobility in strict observation of the Regulations for mobility students at Politecnico di Bari ("Regolamento di Ateneo per la Mobilità Internazionale degli Studenti: [http://www.poliba.it/sites/default/files/regolamento\\_di\\_ateneo\\_per\\_la\\_mobilita\\_internazionale\\_degli\\_studenti\\_.pdf](http://www.poliba.it/sites/default/files/regolamento_di_ateneo_per_la_mobilita_internazionale_degli_studenti_.pdf)

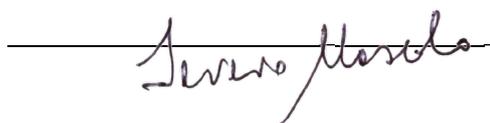
and, in general, following the rules set in the ECTS Users' Guide: [http://ec.europa.eu/education/library/publications/2015/ects-users-guide\\_en.pdf](http://ec.europa.eu/education/library/publications/2015/ects-users-guide_en.pdf)

(see especially Section 4 "ECTS for mobility and credit recognition", and Section 7 "ECTS and supporting documents"). In particular:

- 2.1. The plan of didactic activities, ("Learning Agreement") must be officially approved by DEI before actually starting the mobility. The competent body for approving individual study plans is the DEI Executive Board. Possible changes to the plan must also be officially approved by DEI.
- 2.2. The didactic activities successfully performed in the Partner University will be recognized by DEI, and recorded in the students' career, after reception of an official document from the Partner University ("Transcript of Record")
- 2.3. The whole process must be managed under the administrative supervision of the International Relations Office of Politecnico di Bari, via Amendola 126/B, 70125 Bari (office hours for students: 11.30-13:30). The administrative staff in charge for the student mobility is Dr. Rosilda Sammarco, [rosilda.sammarco@poliba.it](mailto:rosilda.sammarco@poliba.it).
- 2.4. The whole process must be managed under the academical supervision of prof. Tiziano Politi (Erasmus+ Coordinator of DEI for outgoing students), [tiziano.politi@poliba.it](mailto:tiziano.politi@poliba.it), and prof. Mariagrazia Dotoli (DD academic coordinator), [mariagrazia.dotoli@poliba.it](mailto:mariagrazia.dotoli@poliba.it).
- 2.5. Mobility students must contact the administrative and the academic supervisors for all the formal steps and the decisions concerning their mobility.

The Director of the Department of Electrical and Information Engineering

*Prof. Saverio MASCOLO*

A handwritten signature in black ink, reading "Saverio Mascolo", is written over a horizontal line.

**ANNEX 1: List of Courses of the International Double Degree Master between Politecnico di Bari (Italy) and University of Lorraine (France).**

Courses offered during the first year at Politecnico di Bari		Courses offered during the second year at Université de Lorraine	
Laurea Magistrale in Ingegneria Informatica		Master Cognitive Sciences	Master Natural Language Processing
Curriculum: Information Systems	Curriculum: Productive Systems	Curriculum: Cognitive Sciences, Interaction and Artificial Intelligence	Curriculum: Natural Language Processing
<b>FIRST SEMESTER</b>	<b>FIRST SEMESTER</b>		
Formal Languages and compilers (6 ECTS)	Modelling of Discrete Event Systems (6 ECTS)		
Control Methods for Computer Networks (6 ECTS)	Measurement and data acquisition systems (6 ECTS)	Computer Science and Artificial Intelligence (6 ECTS) <ul style="list-style-type: none"> <li>- Neural networks</li> <li>- Data mining</li> <li>- Advanced Web technologies</li> </ul>	Deep learning and data mining (6 ECTS) <ul style="list-style-type: none"> <li>- Neural networks</li> <li>- Data mining</li> <li>- Recommender systems and smart assistant</li> </ul>
Image processing and Artificial Vision 1st module: Image Processing (6 ECTS)	Image processing and Artificial Vision 1st module: Image Processing (6 ECTS)	Behavior and Interaction (6 ECTS) <ul style="list-style-type: none"> <li>- Individual and collective human behavior</li> <li>- Behavioral analysis</li> </ul>	Text and Speech processing (6 ECTS) <ul style="list-style-type: none"> <li>- Processing textual data</li> <li>- Speech processing</li> <li>- Terminology and ontology</li> </ul>
Big Data (6 ECTS)	Big Data (6 ECTS)	Numerical innovation for learning (6 ECTS) <ul style="list-style-type: none"> <li>- E-learning</li> <li>- Serious games</li> <li>- Virtual and augmented reality</li> </ul>	Natural Language processing and discourses (6 ECTS) <ul style="list-style-type: none"> <li>- Application to texts</li> <li>- Computational semantics</li> <li>- Discourse and Dialog modelling</li> </ul>
Elective courses chosen among the courses given at DEI-Politecnico di Bari e mettere questo link <a href="http://dee.poliba.it/DEI-it/didattica/corsi-di-laurea/index.html">http://dee.poliba.it/DEI-it/didattica/corsi-di-laurea/index.html</a> (6 ECTS)	Elective courses chosen among the courses given at DEI-Politecnico di Bari e mettere questo link <a href="http://dee.poliba.it/DEI-it/didattica/corsi-di-laurea/index.html">http://dee.poliba.it/DEI-it/didattica/corsi-di-laurea/index.html</a> (12 ECTS)	User centered design (6 ECTS) <ul style="list-style-type: none"> <li>- Software ergonomics</li> <li>- HMI engineering</li> <li>- Observations and protocols</li> <li>- Art and design</li> </ul>	Lexicon and Grammars for NLP (6 ECTS) <ul style="list-style-type: none"> <li>- Diachronic and synchronic lexicology</li> <li>- Lexical resources</li> <li>- Syntactic framework</li> </ul>
<b>SECOND SEMESTER</b>	<b>SECOND SEMESTER</b>	Artificial Intelligence and Modeling (6 ECTS) <ul style="list-style-type: none"> <li>- Computational neurosciences</li> <li>- Multi-agent systems</li> </ul>	-

		- Recommender systems and smart assistant - Philosophy and IT	
E-business models and business intelligence (6 ECTS)	Human computer interaction (6 ECTS)	Projects and foreign languages (6 ECTS) - Cross-lectures project - Law and ethics in data management - Research methods - Professional integration - Foreign language (English)	Projects and foreign languages (6 ECTS) - Software project - Law and ethics in data management - Research Methods - Professional integration - Foreign language (French)
Distributed Systems (6 ECTS)	Distributed Systems (6 ECTS)	<b>SECOND SEMESTER</b>	<b>SECOND SEMESTER</b>
Numerical methods for IT (6 ECTS)	Digital Programmable Systems (6 ECTS)	Professional or Research internship (30 ECTS)	Professional or Research internship (30 ECTS)
Internet of Things (6 ECTS)	Image processing and Artificial Vision 2nd module: Artificial Vision (6 ECTS)	-	
Image processing and Artificial Vision 2nd module: Artificial Vision (6 ECTS)	Elective course (6 ECTS)	-	-

Courses offered during the first year at Université de Lorraine		Courses offered during the second year at Politecnico di Bari	
Master Sciences Cognitives	Master Natural Language Processing	Laurea Magistrale in Ingegneria Informatica	
Curriculum: Cognitive Science, Interaction and Artificial Intelligence	Curriculum: Natural Language Processing	Curriculum: Information Systems	Curriculum: Productive Systems
		FIRST SEMESTER	FIRST SEMESTER
Probability and Artificial Intelligence (6 ECTS) - Probability and Statistics - Algorithms for AI	Probability and Artificial Intelligence (6 ECTS) - Probability and Statistics - Algorithms for AI	Advanced software engineering (6 ECTS)	Advanced software engineering (6 ECTS)
Software engineering(6 ECTS) - Design - Requirements specification and functional analysis - Project management	Design and acquisition of corpus (6 ECTS) - Written corpus - Speech corpora	Artificial intelligence and Machine Learning (12 ECTS)	Artificial intelligence and Machine Learning (12 ECTS)
Cognitive Sciences Applications (6 ECTS) -Cognitive philosophy	Software engineering (6 ECTS) - Design	Web Languages and technologies. 1st module: Web	Web Languages and technologies. 1st module: Web

<ul style="list-style-type: none"> <li>- Survey methods</li> <li>- Built-in programming</li> <li>- Computer vision</li> </ul>	<ul style="list-style-type: none"> <li>- Requirements specification and functional analysis</li> <li>- Project management</li> </ul>	Languages (6 ECTS)	Languages (6 ECTS)
<p>Behavior and Interaction (6 ECTS)</p> <ul style="list-style-type: none"> <li>- Behavioral analysis</li> <li>- Cognitive psychology</li> <li>- Multimedia communication</li> </ul>	<p>Linguistics for NLP (6 ECTS)</p> <ul style="list-style-type: none"> <li>- Methods for NLP</li> <li>- Phonology</li> <li>- Morphology</li> </ul>	<p>Web Languages and technologies.</p> <p>2nd module: Web-Oriented Technologies and Systems (6 ECTS)</p>	<p>Web Languages and technologies.</p> <p>2nd module: Web-Oriented Technologies and Systems (6 ECTS)</p>
<p>Project and Language (6 ECTS)</p> <ul style="list-style-type: none"> <li>- Cross lectures project</li> <li>- Foreign language (English)</li> </ul>	<p>Project and Language (6 ECTS)</p> <ul style="list-style-type: none"> <li>- Cross lectures project</li> <li>- Foreign language (French)</li> </ul>		
<b>SECOND SEMESTER</b>	<b>SECOND SEMESTER</b>	<b>SECOND SEMESTER</b>	<b>SECOND SEMESTER</b>
<p>Machine Learning and Semantic Web (6 ECTS)</p> <ul style="list-style-type: none"> <li>- Machine learning</li> <li>- Semantic web</li> </ul>	<p>Machine Learning and Semantic Web (6 ECTS)</p> <ul style="list-style-type: none"> <li>- Machine learning</li> <li>- Semantic web</li> </ul>	Internship (6 ECTS)	Internship (6 ECTS)
<p>Behavior and interaction</p> <ul style="list-style-type: none"> <li>- Collective phenomenon in biology</li> <li>- Psychology-based modeling</li> </ul>	<p>Formal Tools (6 ECTS)</p> <ul style="list-style-type: none"> <li>- Logic</li> <li>- Formal languages</li> <li>- Calculability and complexity</li> </ul>	<p>Elective courses chosen among the courses given at DEI-Politecnico di Bari e mettere questo link <a href="http://dee.poliba.it/DEI-it/didattica/corsi-di-laurea/index.html">http://dee.poliba.it/DEI-it/didattica/corsi-di-laurea/index.html</a> (6 ECTS)</p>	Engineered Intelligent Systems (6 ECTS)
<p>Analysis and applications in cognitive sciences (6 ECTS)</p> <ul style="list-style-type: none"> <li>- Smart agents</li> <li>- Game design</li> </ul>	<ul style="list-style-type: none"> <li>- Data processing (6 ECTS)</li> <li>- Storage and retrieval</li> <li>- Data analysis</li> </ul>	Final Examination (18 ECTS)	Final Examination (18 ECTS)
<p>Innovative Technologies (6 ECTS)</p> <ul style="list-style-type: none"> <li>- Innovation in computer science</li> <li>- Technologies for behavioral analysis</li> <li>- Brain Computer Interaction</li> </ul>	<p>Linguistics for NLP (6 ECTS)</p> <ul style="list-style-type: none"> <li>- Lexicology: lexical units and phraseology</li> <li>- Syntax</li> <li>- Semantics</li> </ul>		
<p>Project and Language (6 ECTS)</p> <ul style="list-style-type: none"> <li>- Project and scientific communication</li> <li>- Foreign language (English)</li> </ul>	<p>Project and Language (6 ECTS)</p> <ul style="list-style-type: none"> <li>- Project and scientific communication</li> <li>- Foreign language (French)</li> </ul>		