

ACADEMIC COOPERATION AGREEMENT

BETWEEN

The University of Siena, Via Banchi di Sotto 55, 53100 Siena (Italy) - Italian Fiscal Code 80002070524, represented by its Rector, Prof. Francesco Frati, hereinafter denoted by UNISI

AND

ESTIA school of engineering, 92, allée Théodore-Monod, Technopole Izarbel, 64210 Bidart (France), represented by its Director Patxi Elisade, hereinafter denoted by ESTIA

WHEREAS

- the parties agree to exchange their experiences concerning the implementation of the Bologna Process and, in particular, their approach to teaching evaluation;
- the parties agree on the fundamental importance of promoting inter-university cooperation for the development of dual/joint programmes;
- this agreement has been drawn up in order to facilitate cooperation between the partners in the field of teaching and to foster joint programmes;

THE PARTIES HERETO AGREE

to execute this agreement, which will remain valid for a period of 5 (five) years. Each party may terminate this agreement, also in relation to any changes in the courses offered, with at least six months prior written notice to be sent to the other party before the beginning of the subsequent academic year.

ART. 1 OBJECTIVES

The aim of this agreement is to simplify the current procedure for the organization of a two year Double Degree Master programme, based on any existing specializations, between the UNISI and ESTIA, starting from the academic year 2020/21. The two Institutions will award the following degrees:

- Master of Science (MSc) in Artificial Intelligence and Automation Engineering at UNISI;
- Either Master of Science (MSc) in Big Data and Artificial Intelligence (BIHAR) at ESTIA, or ESTIA Engineering degree.

UNISI and ESTIA agree that students who complete all the courses on the programme, as detailed in the Annex I, obtain the necessary credits and meet all the requirements established by the two institutions, will be awarded the respective Master degrees by both institutions, according to the programmes attended by students at the home and host institutions.

ART. 2 ORGANIZATION OF THE DOUBLE DEGREE PROGRAMME

The parties agree as follows:

- credits obtained in the partner institution will be recognized by the home institution;
- agreed courses and credits will be set out in Annex I, which also specifies the periods of mobility between partner institutions;
- Annex I may be changed in order to follow adjustments imposed by Italian and French University Regulation; possible changes will be communicated by letter addressed to the Rectors and to the persons in charge of implementation (art. 5);
- courses hereunder will be taught in English at UNISI and in English at ESTIA; some courses may be attended online as MOOCs (Massive Open Online Courses);
- candidates to join this programme must be enrolled in MSc Artificial Intelligence and Automation Engineering at UNISI and in either MSc BIHAR at ESTIA, or in 3rd year of ESTIA Engineering Degree (who meet the prerequisite courses of the first year of the MSc BIHAR at ESTIA)
- the home institution will recruit and select its own students to the programme. The final admission of the students will require approval by the host institution;
- exchange students will be exempt from payment of tuition fees at the host institution, on a reciprocal basis. Students will be required to pay tuition to their home institution during the exchange period. Students will pay their own travel costs and living expenses during mobility. Each institution will make every effort to help all visiting students find accommodation for the exchange period;
- exchange students shall have the same rights and obligations as home students regarding the facilities and services of the host institution.

ART. 3 LANGUAGE REQUIREMENTS

In order to be admitted to the Double Degree Master programme at both institutions, students will be required to possess a certification of level B2 of the English language.

Exchange students will be provided with elementary or advanced language courses of the language of the host institution country, so to help them integrate and foster cultural understanding in the local students' community.

ART. 4 EXCHANGE OF FACULTY MEMBERS

Each party undertakes to host in each academic Faculty Members from the Partner University. Special protocols will describe how exchanges will take place; they shall detail the commitments undertaken by both parties.

ART. 5 INSURANCE

During the mobility the students will be responsible of having obtained health and travel insurance.

ART. 6 FINANCING

Any financial terms of cooperation will be set out in specific protocols which can only be enforced following approval by the academic bodies of both institutions.

ART. 7
PERSONS IN CHARGE OF IMPLEMENTATION

The parties designate the following coordinators to facilitate implementation of the agreement:

UNISI: Prof. Marco Maggini, Department of Information Engineering and Mathematics
ESTIA: Prof. Serge Miranda, Scientific Director of MSc BIHAR and Prof. Xavier Fisher, International programme coordinator at ESTIA

ART. 8
EQUAL OPPORTUNITIES

In order to implement this agreement, the parties undertake to guarantee equal opportunities without discrimination of race, gender, religion, social class and ethnicity.

ART. 9
LANGUAGE

The agreement is drawn up and signed in English.

ART. 10
DISPUTES

Any disputes arising from or in connection with this agreement will be settled by a board of arbitrators consisting of one member designated by each party and one further member chosen by mutual agreement.

ART. 11
SPECIAL PROVISIONS

The parties undertake to provide language courses at different levels for the participating students. The student will cover the cost of the language courses at the home institution if needed.

IL RETTORE
Università degli Studi di Siena

DIRECTOR
ESTIA

Prof. Francesco Frati

Prof. Patxi Elisalde

Annex I

Academic Cooperation Agreement between UNISI and ESTIA

Both the MSc “Big Data and Artificial Intelligence” at ESTIA and the MSc “Artificial Intelligence and Automation Engineering” at UNISI are based on 120 ECTS for a two-year programme.

The students from each university complete the first year in their university of origin and get at least one semester during the second year in the partnering university. The structures of the respective study plans are reported in the following. Some courses are elective as specified in the following tables, meaning that the student is free to choose the preferred courses in the provided list so that the required total number of ECTS is reached.

The second semester of the second year will be mainly devoted to the internship and MSc thesis preparation that may be framed into joint projects and collaborations, with advisors from both institutions.

Maximum 15 students from each University may enter the exchange programme in the first year of agreement (academic year 2020/2021). The number of eligible students will be reviewed yearly and reported with a written formal communication addressed to the Rectors and to the persons in charge of implementation (art. 2 and art. 5 of the Academic Cooperation Agreement).

DELIVERY OF THE ACADEMIC DEGREES

Each institution grants the student credit transfer from the other institution according to the applicable rules, laws and regulations of that institution. Students successfully completing their studies of the Double Degree programme obtain two degrees, one issued by the home institution and one issued by the host institution.

The double degree can also be awarded to students who have completed the degree in the home institution following the standard plan of studies if they obtain additional 30 ECTS at the host university by completing the missing exams of the host university as listed in the following tables. In this case the students have to enroll to the host institution for these courses.

A Committee consisting of representatives of both parties is set up to validate the merits of the students who have not met the requirements for the Double Degree at the end of the period at the host institution. Depending on the case, the Committee will propose to those students who have accumulated at least 80% of expected ECTS credits included in the Learning Agreement to either:

- study for an extra semester at the host institution in order to accomplish the Double Degree programme, or
- resign from the Double Degree programme and only be awarded the degree of the home institution, when completed.

If the student has gained less than 80% of expected ECTS credits of those included in the Learning Agreement, she/he will be excluded from the Double Degree programme.

PROGRAMME STRUCTURE AND FINAL THESIS

The final degree project (master's thesis) shall be performed according to the rules and regulations of both institutions. The subject of the final degree project must always receive an advance approval in writing from a faculty member of the host as well as the home institution. The final degree project results in a report written in English.

MSc thesis defense will be given in any of the institutions with the possibility to have a mixed committee.

Track of ESTIA student (first year at ESTIA, second year at UNISI)

ESTIA student first year at ESTIA

The ESTIA student should follow the standard BIHAR study plan achieving 30 ECTS according to the following table:

#	Module Title at ESTIA	Year ¹	Type ²	Equivalent SSD IT ³	IT Cat. ⁴	ECTS
1	Database and administration fundamentals	I	C	ING-INF/05	Car	3
2	Big Data fundamentals	I	C	ING-INF/05	Car	3
3	Databases administration and tuning fundamentals	I	C	ING-INF/05	Car	3
4	Big Data engineering and administration	I	C	ING-INF/05	Car	3
5	Data analysis and Artificial Intelligence fundamentals	I	C	ING-INF/05	Car	3
6	Machine learning fundamentals with R/Python	I	C	ING-INF/05	Car	3
7	Web programming fundamentals	I	C	INF/01	Aff	3
8	Client-side and server-side javascript	I	C	INF/01	Aff	3
9	Mobile applications development fundamentals	I	C	INF/01	Aff	3
10	Project design, management and communication	I	C	INF/01	Aff	3
11	Interdisciplinary project	I	C			0

At the end of the first year ESTIA student has achieved 18 ECTS “Caratterizzanti” and 12 ECTS “Affini” (Italian Categorization), total 30 ECTS.

¹ **Year:**

It is referred to the present collocation of the exam in the 2-year degree

² **Type:**

C – Compulsory course

E – Elective course

³ **Equivalent SSD (Scientific Disciplinary Sector) in Italy:**

INF/01 Computer Science

MAT/09 Operations Research

ING-INF/03 Telecommunications

ING-INF/04 Control Engineering

ING-INF/05 Computer Engineering

⁴ **IT cat. (Italian Categorization):**

Car: Caratterizzanti (core disciplines of the MSc class)

Aff: Affini (complementary disciplines)

ESTIA student second year at UNISI/ESTIA

Second year should make possible to learn two important specific learning tracks, respectively

- BIG DATA ANALYTICS learning track at UNISI
- BIG DATA MANAGEMENT (AND APPLICATION DEVELOPMENT) learning track at ESTIA

The student must achieve 60 ECTS with at least 30 ECTS from UNISI (1st semester) according to the following table. The student must select at least 39 ECTS labeled as “Caratterizzanti”, 9 ECTS as “Affini” and 12 ECTS of eligible (free) courses.

Institution	Course Title	Year	Sem.	Type	Equivalent SSD IT	IT Cat.	ECTS
UNISI	Machine learning	II	I	C	ING-INF/05	Car	6
UNISI	Neural networks	II	I	C	ING-INF/05	Car	6
UNISI	Language processing technologies	II	I	C	ING-INF/05	Car	6
UNISI	Artificial Intelligence	II	II	C/E ⁵	ING-INF/05	Car	9
UNISI	Design of Applications, Services and Systems	II	I	E	ING-INF/05	Car	9
UNISI	Advanced Digital Image Processing	II	I	E	ING-INF/03	Aff	9
UNISI	Bioinformatics	II	I	E	ING-INF/05	Car	6
UNISI	High Performance Computer Architecture	II	I	E	ING-INF/05	Car	9
UNISI	Automata and Queueing Systems	II	I	E	ING-INF/04	Car	6
UNISI	Discrete Event Systems	II	I	E	ING-INF/04	Car	9
ESTIA	Advanced databases	II	MOOC	C	ING-INF/05	Car	6
ESTIA	Distributed big data management	II	MOOC	C	ING-INF/05	Car	6
ESTIA	Advanced Web programming	II	II	C	INF/01	Aff	6
ESTIA	Advanced mobile and contactless applications development	II	II	C	INF/01	Aff	6
ESTIA	Cloud programming and Blockchain	II	MOOC	E	ING-INF/05	Car	6
ESTIA	Parallel systems and cybersecurity	II	MOOC	E	ING-INF/05	Car	6
ESTIA	Augmented reality and virtual reality applications development	II	II	E	ING-INF/05	Car	6
ESTIA	Soft Skills (DATA TOKI / ERASMUS)	II	MOOC	C		Aff	3

The second year is completed by 30 ECTS MSc thesis that may include an internship in a company or research laboratory.

⁵ It is strongly recommended. It is compulsory in case a MOOC version is available.

At the end of the second year each student must have achieved a minimum total of 57 ECTS “Caratterizzanti”, a minimum total of 21 ECTS “Affini” (Italian categorization), and 12 ECTS for eligible (free) courses table (other eligible courses out of the list need approval by the MSc committee).

Track of UNISI student (first year at UNISI, second year at ESTIA)

UNISI student first year at UNISI

The student should follow the standard MSc “Artificial Intelligence and Automation Engineering” study plan achieving 57 ECTS according to the following table.

#	Course Title at UNISI	Year	Sem.	Type	Equivalent SSD IT	IT Cat.	ECTS
1	Automata and queueing systems	I	I	C	ING-INF/04	Car	6
2	Advanced digital image processing	I	I	C	ING-INF/03	Aff	9
3	High performance computer architecture	I	I	C	ING-INF/05	Car	9
4	Machine learning	I	I	C	ING-INF/05	Car	6
5	Big data	I	II	C	ING-INF/05	Car	6
6	Artificial intelligence	I	II	C	ING-INF/05	Car	9
7	Languages and models for bioinformatics	I	II	C	INF/01	Aff	6
8	Network optimization	I	II	C	MAT/09	Aff	6

At the end of the first year each student has achieved 36 ECTS “Caratterizzanti” and 21 ECTS “Affini” (Italian categorization), total 57 ECTS.

UNISI student second year at ESTIA

The student must achieve 33 ECTS, 21 ECTS “Caratterizzanti” and 12 ECTS eligible courses, chosen according to the following table (eventual eligible courses out of the list need approval by the MSc committee).

Institution	Course Title	Year	Sem.	Type	Equivalent SSD IT	IT Cat.	ECTS
UNISI (MOOC)	Advanced Machine Learning and Deep Learning	II	I	C	ING-INF/05	Car	6
ESTIA	Advanced databases ⁶	II	II ⁷	C	ING-INF/05	Car	6
ESTIA	Distributed big data management	II	II ⁸	C	ING-INF/05	Car	6

⁶ The student needs to follow the prerequisite MOOC “Database fundamentals” of the 1st year

⁷ This course is delivered in the beginning of the second semester in ESTIA (january/february) corresponding to the first semester in UNISI

⁸ This course is delivered in the beginning of the second semester in ESTIA (january/february) corresponding to the first semester in UNISI

UNISI (MOOC)	Natural Language Processing	II	I	E	ING-INF/05	Car	6
ESTIA	Cloud programming & Blockchain	II	I	E	ING-INF/05	Car	6
ESTIA	Parallel systems and cybersecurity	II	I	E	ING-INF/05	Car	6
ESTIA	Agile programming and continuous deployment methods	II	I	E	ING-INF/05	Car	6
ESTIA	Soft Skills (DATA TOKI / ERASMUS)	II	MOOC	E			3

The second year is completed by 30 ECTS MSc thesis that may include an internship in a company or research laboratory (9 ECTS for internship and 21 ECTS for thesis).

At the end of the second year each student has achieved a total of 57 ECTS “Caratterizzanti”, a total of 21 ECTS “Affini” (Italian categorization) and 12 ECTS of eligible courses.