



同濟大學
TONGJI UNIVERSITY



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Double Master Programme Cooperation Agreement

between

College of Electronic and Information
Engineering
of
Tongji University
Shanghai, China

and

E.T.S. Ingeniería y Sistemas de
Telecomunicación
of
Universidad Politécnica de Madrid
Madrid, Spain

On the basis of the graduate regulations of Tongji University and the graduate regulations of Technical University of Madrid.

- Tongji University, hereafter referred to as Tongji, located at 1239 Siping Road, Shanghai, 200092, P.R. CHINA, hereby duly represented by its President, Prof. Dr. ZHENG Qinghua, and
- Universidad Politécnica de Madrid, hereafter referred to as UPM, C/Ramiro de Maeztu, 7, 28040, Madrid, SPAIN, hereby duly represented by Prof. Dr. Guillermo CISNEROS PÉREZ, appointed Rector by Madrid Regional Government Council Decree 109/2020 of November 25th (published in Official Journal of the Community of Madrid No. 289 on November 26th), pursuant to the powers conferred upon me by the Statutes of the aforesaid university, passed by Decree 74/2010 of October 21st (published in the Official Journal of the Community of Madrid No 273 on November 15th, 2010).

The parties are jointly referred to as "the parties" and hereby agree to the following regulations concerning the awarding of a joint Double Master's Programme according to the conditions specified in the next sections:

SECTION I - PURPOSE OF THE AGREEMENT

I.1. General aim

Tongji and UPM will promote the exchange of students between them in the context of an educational programme that will lead students to be awarded with two Master Degrees (hence Double Master Programme – DMP), one issued by each university.

I.2. Master programmes involved

The DMP referred to in this agreement involves the following Master programmes, hereafter referred to as MPs:

- MP offered at Tongji:
 - DISCIPLINE CODE: 085400
 - DISCIPLINE NAME: Master of Electronic Information in ELECTRONIC INFORMATION
- MP offered at UPM:
 - DISCIPLINE CODE: 59AI
 - DISCIPLINE NAME: Master in WIRELESS COMMUNICATIONS

SECTION II - ADMISSION

II.1. Definitions

Home university: This is the university, be it either Tongji or UPM, to which the student firstly applies for admission into the DMP and in which the student spends his/her first study period in the event of being admitted (refer to study plans specified in the appendices for details).

Host university: This is the university, where the student spends his/her second study period, after completing the first one at the home university.

II.2. Limitations

Each university, when acting as host, will admit a maximum of 5 incoming students per academic year in total, and both parties will try to maintain a balance between incoming and outgoing students each year.

II.3. Applications, Selection, Nomination and Admission of Students

- 1 Each university will establish their own application and selection processes. For students to enrol in the DMP, they must be admitted by both universities to their corresponding MPs.
- 2 An admissions team at the home university will select students during the first semester of their first year of Master studies.
- 3 All documentation from the admitted students will be collected by the administrative coordinator for student exchange at the home university, who will send a list of nominated students, together with their corresponding documents, to his/her counterpart at the host university before the end of the first semester, in case of UPM being the home, and the end of the second semester, in case of Tongji.
- 4 Each host university will review the documents corresponding to the nominated students for their admission.
- 5 Candidate students will be ranked and admitted to the program according to their academic results, fulfillment of prerequisite requirements, and motivations.
- 6 As stated above, each university will make decisions on admissions according to its own academic regulations. The academic committees or academic coordinators of MPs at both universities will share the final decision for the admission of students participating in the DMP.
- 7 All students must be enrolled in the DMP on a full-time basis.
- 8 Official notification on admission will be individually sent to students by the administrative coordinators for student exchange at their home universities, who will share the list and admission letters with their counterparts at the host university.

II.4. Documentation and Deadlines

- 1 After admission of the host university, all parts (universities and students) will sign a learning agreement specific for each student. This will specify the courses already taken at the home university, the courses to be taken at the host university, and the courses foreseen for the last period at the home university. The signature of the learning agreement will allow an easier supervision of the fulfillment of rules, regulations and other requirements of the DMP for each specific student.
- 2 It is essential that all students present, timely and in due form, proof of certificates, transcripts, and other necessary documents, which are required by the host university for application and admission.
- 3 All documents related to the DMP are to be written in English.
- 4 The two university centers in which the MP are taught should exchange information about the documents required by each one in advance, so that document exchange can be performed meeting all institutional deadlines.
- 5 Both universities will provide transcripts of records for incoming students and send them directly to the home university.

II.5. Rights and Status of the students

- 1 Students participating in this DMP will be enrolled as students of both MPs, so they will have the same rights and obligations as other master students in the respective universities.
- 2 Students participating in the programme will be entitled to participate in any welcome programmes that are customarily arranged for international students at host universities.
- 3 Host universities will assist students participating in the DMP in finding accommodation, to the extent of their possibilities.

II.6. Financial Consideration

- 1 Students from both universities will pay for their own expenses related to travelling abroad (i.e. passport, visa and international transportation costs), health insurance, accommodation and other living costs.
- 2 Additional charges, potentially including social services, student union fees, or similar, will depend on the regulations of host universities.
- 3 No tuition fees will be paid to the host university during the period that students are actively participating in the DMP program.

II.7. Insurance

Students will take all necessary steps to arrange for health insurance, insurance coverage against physical injuries and civil liability while performing their academic and research duties at the universities involved, in pursuance of the rules and regulations that apply within the concerned universities and in compliance with national statutory regulations as applicable.

SECTION III - STUDY CURRICULA, SUPERVISION AND EXAMINATION

- 1 After finishing their first semester, students having the UPM as home university will continue their studies at Tongji for at least two semesters.
- 2 On the other hand, students having Tongji as their home university will continue their studies at UPM for two semesters after completing their first two semesters at Tongji.
- 3 Courses, both compulsory and elective, examinations, and final dissertation will be fully recognized by both universities, as specified in individual learning agreements.
- 4 Course syllabi will be made available to both parties and students before signing their learning agreements.
- 5 The schedule of courses and final Master Thesis for all students participating in the DMP is shown in the Study Plan in appendices A and B at the end of this agreement.
- 6 The official teaching language of this DMP is English.
- 7 All students will write a final dissertation in English that will be co-supervised by teachers from both universities and assessed both in written and oral form at any of the two partner universities by a committee of at least three experts in the scientific field of this DMP. This English version will be enough in order to qualify for both the UPM and the Tongji degrees, except for students whose home university is Tongji, for whom the following applies: *In order to be qualified for the Tongji degree, Tongji students will write a version of their Master thesis in Chinese, besides the English version. This Chinese version of the MT will only have to be checked and signed by the Tongji co-supervisor of the MT.*

- 8 The duration of the Master programme at Tongji is 2.5 years with a maximum of 4 years.

SECTION IV - AWARDING OF DIPLOMAS

- 1 The Study Plan in appendices A and B includes all compulsory courses to be taken at home university, or replaced by equivalent courses as described in appendix D, at host university.
- 2 In order to obtain both degrees of the DMP, the candidate must be author or co-author of, at least, one journal/conference publication related to the Master thesis. In the case of UPM's MP in WIRELESS COMMUNICATIONS, it suffices to have sent the manuscript to be reviewed and considered for its publication. In the case of Tongji's MP in ELECTRONIC INFORMATION degree, it is necessary that the manuscript has been published. Besides, the applicant should be either the first author or the first after his/her co-supervisors; and the applicant's affiliations have to be "Tongji University" and "Universidad Politécnica de Madrid".
- 3 After successful completion of the complete program at both universities, the students will receive the degrees of both universities specified in section I.

SECTION V - ACADEMIC COORDINATORS AND PROGRAMME DIRECTORS

- 1 DR. JUNYUAN WANG from Tongji and PROF. ANTONIO PÉREZ YUSTE from UPM will act as academic coordinators of this DMP.
- 2 Academic coordinators have the responsibility of guiding the students through the corresponding MPs. They are also responsible for the annual evaluation of this Agreement as well as to purpose further actions.
- 3 It is the responsibility of the academic coordinators to guarantee that the rules, regulations and other requirements for each MP are followed and fulfilled.
- 4 PROF. WANG Chao from Tongji and PROF. ANTONIO PÉREZ YUSTE from UPM act as directors for the Double Master's Programme at each university.
- 5 PROF. CHEN Hong from Tongji and PROF. AMADOR MIGUEL GONZÁLEZ CRESPO from UPM act as directors of the Centers hosting the DMP at each university.

SECTION VI - TERMS OF AGREEMENT

VI.1. Duration

- 1 The present agreement will come into effect as soon as the authorities of both universities sign it. Should the Agreement be signed in two different dates, the into effect will refer to the latest date. It will remain in effect for 4 years, renewable in writing by mutual consent and by drafting a new document.
- 2 Each university may terminate this agreement before its expiration, provided that a written notice of the intent is given to the other party at least 6 months prior to termination. Commitments already in progress shall be fulfilled and students enrolled in the program will at that time be given a reasonable amount of time to complete it.

VI.2. Changes

- 1 Amendments or changes to this agreement shall be made in writing and signed by the duly authorized representatives of the institutions.

- 2 If any of the two MP involved in this DMP changes its name, is replaced by a similar but different degree or has some of its contents altered in a manner that affects this cooperation agreement, an amendment shall be made in writing and signed by the two program Directors.

VI.3. Intellectual Property Rights

In the case of intellectual property rights generated as a result of this Double Degree programme, the national regulations by which each institution is bound shall be adhered to.

VI.4. Data Protection

With respect to the protection of personal data that may be collected and processed to make this agreement effective, the parties undertake to comply with the General Data Protection Regulation (EU) 2016/679 of 27 April, and other regulations that may apply.

VI.5. Dispute resolution

Should any doubt or dispute arise from the interpretation or implementation of the present agreement, the Parties will strive to achieve a solution by mutual consent. Should this solution not be possible, the Parties will choose a third person to act as a mediator or judge.

This agreement is signed in 4 copies, with equal validity.

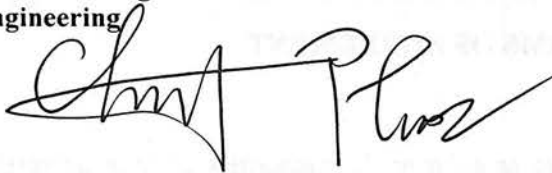
PROF. Dr. ZHENG Qinghua
President of Tongji University



PLACE AND DATE:

Shanghai, 18.03.2024

PROF. Dr. CHEN Hong
Dean of College of Electronic and Information
Engineering



PLACE AND DATE:

Shanghai, 18.03.2024

PROF. Dr. WANG Chao
Director of the DMP at Tongji



PLACE AND DATE:

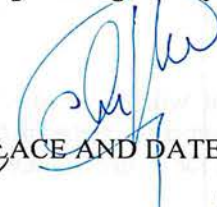
Shanghai, 18.03.2024

PROF. Dr. Guillermo CISNEROS PÉREZ
Rector of Universidad Politecnica de Madrid



PLACE AND DATE: 31 JAN 2024

**PROF. Dr. Amador Miguel GONZÁLEZ
CRESPO**
Director of School of Telecommunication
Engineering and Systems



PLACE AND DATE:

Madrid, 9 January 2024

PROF. Dr. Antonio PÉREZ YUSTE
Director of the DMP at UPM



PLACE AND DATE:

Madrid, 9 Jan 2024



APPENDIX A: STUDY PLAN FOR THE DOUBLE MASTER'S DEGREE OF UPM STUDENTS

YEAR1		YEAR2	
Semester 1 at UPM	Semester 2 at Tongji	Semester 3 at Tongji	Semester 4 at UPM
Compulsory: ADVANCED INFORMATION THEORY (6ECTS) MOBILE COMMUNICATION SYSTEMS (6ECTS) RF WIRELESS TECHNOLOGY (6ECTS) ANTENNA TECHNOLOGY (4.5 ECTS) NETWORK ARCHITECTURE AND PROTOCOLS (4.5 ECTS) SCIENTIFIC RESEARCH METHODOLOGY (3 ECTS)	Compulsory Common Courses: CHINESE LANGUAGE (3TJC) A GENERAL VIEW OF CHINA (3TJC) ENGINEERING ETHICS (2TJC) SPECIALIZED FIELD PRACTICE (6TJC) RESEARCH WRITING AND ETHICAL NORM (2TJC) TONGJI UNIVERSITY ADVANCED LECTURES FOR GRADUATE STUDENTS (2TJC) THESIS PROPOSAL (1TJC) INTERIM ASSESSMENT (0TJC)	Compulsory Degree and Non-Degree Courses: WIRELESS COMMUNICATION THEORY (2TJC) PROPAGATION CHANNEL CHARACTERIZATION (2TJC) PHYSICAL-LAYER SECURITY THEORY FOR WIRELESS COMMUNICATIONS (2TJC) GRAPHS AND APPLICATIONS (2TJC)	Compulsory: Master Thesis (12 ECTS/0 TJC)
Total: 30 ECTS	Total: 27 TJC	Total: 12 ECTS/0 TJC	

Remark:

Each student needs to take 37 TJC, including 18 TJC for compulsory common courses, 11TJC for degree courses, and 8 TJC for non-degree courses, among which 10TJC degree courses and 2TJC Non-degree course can be recognized by the courses taken at UPM. The course equivalence is specified in Appendix D.



APPENDIX B: STUDY PLAN FOR THE DOUBLE MASTER'S DEGREE OF TONGJI STUDENTS

YEAR 1		YEAR 2		YEAR 3	
Semester 1 at Tongji	Semester 2 at Tongji	Semester 3 at UPM	Semester 4 at UPM	Semester 5 at Tongji	Semester 6 at Tongji
Compulsory:		Compulsory:		Compulsory:	
ENGINEERING ETHICS (2TJC)		ADVANCED INFORMATION THEORY (6ECTS)		Master Thesis (12 ECTS/0 TJC)	
SPECIALIZED FIELD PRACTICE (6TJC)		MOBILE COMMUNICATION SYSTEMS (6ECTS)			
RESEARCH WRITING AND ETHICAL NORM (2TJC)		RF WIRELESS TECHNOLOGY (6ECTS)			
TONGJI UNIVERSITY ADVANCED LECTURES FOR GRADUATE STUDENTS (2TJC)		ANTENNA TECHNOLOGY (4.5 ECTS)			
THESIS PROPOSAL (1TJC)		NETWORK ARCHITECTURE AND PROTOCOLS (4.5 ECTS)			
ITERIM ASSESSMENT (0TJC)		SCIENTIFIC RESEARCH METHODOLOGY (3 ECTS)			
Choose 5 TJC among the Common Courses listed in Appendix C					
Take the following Degree and Non-Degree Courses:					
WIRELESS COMMUNICATION THEORY (2TJC)					
PROPAGATION CHANNEL CHARACTERIZATION (2TJC)					
PHYSICAL-LAYER SECURITY THEORY FOR WIRELESS COMMUNICATIONS (2TJC)					
GRAPHS AND APPLICATIONS (2TJC)					
Choose 3 TJC among the Non-Degree Mathematic Courses listed in Appendix C					
Total: 29 TJC		Total: 30 ECTS		Total: 12 ECTS/0 TJC	

Remark:

Each student needs to take 37 TJC, including 18 TJC for compulsory common courses, 11TJC for degree courses, and 8 TJC for non-degree courses, among which 10TJC degree courses and 2TJC Non-degree course can be recognized by the courses taken at UPM. The course equivalence is specified in Appendix D.



APPENDIX C: CURRICULUM OF THE EDUCATION PLAN OF THE MASTER PROGRAM IN ELECTRONICS INFORMATION AT TONGJI UNIVERSITY

Course Type	Course Number	Course Name	College	Credits	Hours
Common Courses	2090268	First Foreign Language (German)	College of Foreign Languages	2	36
	2090270	First Foreign Language (Japanese)	College of Foreign Languages	2	36
	2090272	First Foreign Language (Russian)	College of Foreign Languages	2	36
	2090273	First Foreign Language (French)	College of Foreign Languages	2	36
	2090305	Literature Reading and Translation	College of Foreign Languages	1.5	36
	2090306	Academic English Writing II	College of Foreign Languages	1.5	36
	2090307	Seminar on Chinese Culture in the New Era II	College of Foreign Languages	1.5	36
	2090308	Listening, Speaking and Critical Thinking II	College of Foreign Languages	1.5	36
	20002950001	Theory and Practice of Socialism with Chinese Characteristics in the New Era	School of Marxism		
	Degree Courses	1080118	Wireless Communication Theory	College of Electronic and Information Engineering	2
20002440000		Advanced Digital Signal Processing	College of Electronic and Information Engineering	2	36
20002440011		Stochastic Signal Processing	College of Electronic and Information Engineering	2	36
2080320		Communication Networks: Architecture and Protocols	College of Electronic and Information Engineering	2	36
2080321		Broadband Wireless Communications	College of Electronic and Information Engineering	2	36
2080428		Convex Optimization and Applications	College of Electronic and Information Engineering	2	36
2080430		Modern Information Theory and Applications	College of Electronic and Information Engineering	2	36
2080432		Modern Coding Theory	College of Electronic and Information Engineering	2	36
2080435		Modern Signal Processing	College of Electronic and Information Engineering	2	36
Non-degree Courses		20002440001	Internet of Things Applications and Data Analysis	College of Electronic and Information Engineering	2
	20002440002	Physical-Layer Security Theory for Wireless Communications	College of Electronic and Information Engineering	2	36
	20002440010	Graphs and Applications	College of Electronic and Information Engineering	2	36
	2080333	Train Control Theory Based on Communication	College of Electronic and Information Engineering	2	36
	2080416	Introduction of Communication and Information Processing of Internet of Vehicles	College of Electronic and Information Engineering	2	36
	2080425	Propagation channel characterization	College of Electronic and Information Engineering	2	36
	2102002	Numerical Analysis	Department of Mathematics	3	54



		Department of Mathematics		3	54
Compulsory Courses	2102003	Stochastic Process		2	36
	2020578	Engineering Ethics		6	108
	20000140006	Specilized Field Practice		2	36
	20002020001	Research Writing and Ethical Norm		1	0
	2900002	Thesis Proposal		2	36
	2900012	Tongji University Advanced Lectures for Graduate Students		0	0
	2900013	Interim Assessment		0	0



APPENDIX D: COURSE EQUIVALENCE AND RECOGNITION

Courses Taken at UPM	ECTS	TJC	Tongji courses being recognized by equivalence
ADVANCED INFORMATION THEORY	6	4	MODERN INFORMATION THEORY AND APPLICATIONS MODERN CODING THEORY
MOBILE COMMUNICATION SYSTEMS	6	4	BROADBAND WIRELESS COMMUNICATIONS ADVANCED DIGITAL SIGNAL PROCESSING
NETWORK ARCHITECTURE AND PROTOCOLS	4.5	2	COMMUNICATION NETWORKS: ARCHITECTURE AND PROTOCOLS
ANTENNA TECHNOLOGY	4.5	2	ADVANCED ELECTROMAGNETICS

Courses Taken at Tongji	TJC	ECTS	UPM courses being recognized by equivalence
PROPAGATION CHANNEL CHARACTERIZATION	2	4.5	WIRELESS CHANNEL MODELING
GRAPHS AND APPLICATIONS	2	4.5	WIRELESS COMMUNICATIONS IN ITS
WIRELESS COMMUNICATIONS THEORY	2	4.5	SHORT RANGE WIRELESS COMMUNICATIONS
PHYSICAL LAYER SECURITY THEORY FOR WIRELESS COMMUNICATIONS	2	4.5	WIRELESS SENSOR NETWORKS

