

Cooperation Agreement between
University of Napoli Federico II
and
Lodz University of Technology
Joint Double degree study program in Electronic Engineering

This Agreement is entered into by and between:

Lodz University of Technology ("TUL"),

located at Żeromskiego 116, 90-924 Łódź, POLAND

Represented by Professor Sławomir Wiak, Vice Rector of Lodz University of Technology

and

the University of Napoli Federico II ("UNINA")

located at Corso Umberto I 40 , 80138 Napoli, ITALY

Represented by

further denoted in the text as "the Parties."

Preamble.

- There is an active agreement between the Parties, in the framework of the Erasmus+ program.
- TUL and the Department of Electrical Engineering and Information Technology of UNINA have signed a letter of intent in February 2014, to establish a long-term educational and scientific cooperation in the fields of Electronics, Information and Communication Technology, Robotics, Electrical Engineering, Bioengineering, and Operational Research.
- The Parties intend to further strengthen the educational collaboration in the field of Electronic Engineering.

Article 1. Goal.

The Parties agree in establishing a joint double degree study program for a Master Degree in Electronic Engineering, further denoted in the text as "double degree program". The students participating to the program, after acquiring all the needed credits as detailed below, will receive the corresponding degree: "Laurea Magistrale in Ingegneria Elettronica" from UNINA and "Master Degree in Electronics and Telecommunications" from TUL.

Article 2. Participants.

Can participate to the double degree program the UNINA students enrolled in the "Corso di Laurea Magistrale in Ingegneria Elettronica" and the TUL students enrolled in the "Master Degree in Electronics and Telecommunications".

2.1 Number of students.

A maximum of 10 UNINA students and 10 TUL students can be admitted each year to the double degree program.

2.2 Students Selection.

Each academic year, the Parties will arrange, in each University, a procedure to select the students admitted to the program, among the applicants.

UNINA students will be selected by a suitable Selection Committee, nominated by the "Coordinatore del Coordinamento didattico del CdL Magistrale in Ingegneria Elettronica". The Selection Committee will consider the applicant curriculum - in particular the undergraduate degree final grade ("voto di laurea") - and her/his English knowledge.

TUL students will be selected by a suitable Selection Committee, nominated by the "Dziekan Wydziału Elektrotechniki, Elektroniki Informatyki I Automatyki". The Selection Committee will consider the applicant curriculum – in particular the undergraduate degree final grade ("dyplom inżyniera") – and her/his English knowledge.

2.3 University tuition fee.

Participating students will be enrolled in both Universities. UNINA students will pay the UNINA university tuition fee and TUL students will pay the TUL university tuition fee, if any.

2.4 Mobility grants.

Travel and accommodation expenses will be borne by participating students.

TUL will reserve an Erasmus+ mobility grant for each TUL student enrolled in the program. UNINA will reserve an Erasmus+ mobility grant for each UNINA student enrolled in the program.

2.5 Student housing.

While in Lodz, the UNINA students will have access to TUL university dormitory, at its standard cost.

UNINA will work to facilitate the accommodation of TUL students, during their stay in Napoli.

The parties are not bound by additional financial obligations for the accommodation of the incoming students.

2.6 Student stay regulation.

While the students stay in a particular university, his/her obligations and rights as a student are described in the regulations of study being in force in the hosting university.

Article 3. Double degree organization.

3.1 ECTS Credits.

The double degree program is organized into two years, for a total of 120 ECTS credits; each year is in turn subdivided into two semesters. Students will stay in each University for two semesters (not necessarily consecutive) and must pass exams/stages for at least 55 ECTS in each institution to be qualified for its degree.

3.2 Semesters.

The implementation of the program is the following:

- First year, first semester: students attend classes at their home universities.
- First year, second semester: students are changing their location to TUL, where classes are taught.
- Second year, first semester: students are changing their location to UNINA, where classes are taught.
- Second year, second semester. TUL students stay at UNINA, may have additional courses at UNINA, attend to lab stage and prepare Thesis at UNINA. UNINA students stay at TUL, may have additional courses at TUL, attend to lab stage and prepare Thesis at TUL.

3.3 Courses.

The courses included in the program, with indication of the semester, when relevant, and the number of ECTS, are detailed in Appendix 1. All the courses, with the exception of the first year, first semester, are given in English.

3.4 Lecturers.

Lecturers are mainly from University where students are located. Classes can be conducted also by lecturers from the other University, possibly with the help of e-learning modules and/or weekly visits. The travel and accommodation expenses of the UNINA Lecturers are borne by UNINA. The travel and accommodation expenses of the TUL Lecturers are borne by TUL.

Students, professors and lecturers participating in the program, while abroad during the program, must have an insurance plan that meets at least the following coverage: health, hospitalization, accident, repatriation and civil liability. If the coverage available as university student, professor or lecturer does not fulfill these requisites, those participating in the program are required to stipulate an adequate personal insurance.

3.5 Thesis

After having acquired all the needed credits as detailed in Appendix 1, the student participating to the program will prepare the final thesis, written in English, which will be discussed in both institutions. After thesis acceptance in UNINA, the student will receive the degree: "Laurea Magistrale in Ingegneria Elettronica" from UNINA. After thesis acceptance in TUL, the student will receive the "Master Degree in Electronics and Telecommunications" from TUL.

3.6 Coordinators.

For UNINA, the coordinators of the program in Electronic Engineering are: the "Coordinatore del Coordinamento didattico del CdL Magistrale in Ingegneria Elettronica" and the Erasmus Delegate of the Department of Electrical Engineering and Information Technology.

For TUL, the coordinators of the program in Electronic Engineering are: "Koordynator ds. Studiów Polsko-Włoskich" and the Erasmus Officer at TUL International Affair Office

The coordinators of the Parties (or their delegates) will meet at least once a year, to monitor the double degree program implementation and to suggest possible improvements. The minutes of the meeting will be drawn and approved.

3.7 Modifications.

The Coordinators can agree to modify the list of courses and organization reported in Appendix 1, to improve the double degree program. Coordinators of both Parties should jointly propose the modification at least six months before the start of the next academic year. To be effective, the modifications should be finally approved: for UNINA, by the Board of the Department of Electrical Engineering and Information Technology (Consiglio di Dipartimento); for TUL, by the Faculty Council of the Faculty of Electrical, Electronic, Computer and Control Engineering (Rada Wydziału).

3.8 Students unable to complete path in time.

At the end of the first year, if a UNINA student participating to the program has not passed exams for a total of at least 38 ECTS (with at least 20 ECTS obtained in TUL) he/she will be excluded from the double degree program. The Credits obtained in TUL will be accredited in his/her UNINA student career as Erasmus+ courses.

At the end of the second year, if a UNINA student participating to the program has not passed exams/stages for a total of at least 80 ECTS (with at least 38 ECTS obtained in TUL) he/she will be excluded from the double degree program. The Credits obtained in TUL will be accredited in his/her UNINA student career as for Erasmus+ courses.

At the end of the second year, if a UNINA student participating to the program has get at least a total of 80 ECTS (with at least 38 ECTS get in TUL) he/she will be allowed to continue the double degree program for an additional academic year. At the end of this additional academic year if he/she has not completed the program, he/she will be the excluded from the double degree program. The Credits obtained in TUL will be accredited in his/her UNINA student career as for other Erasmus+ courses.

At the end of the first semester, if a TUL student participating to the program has not passed exams for a total of at least 12 ECTS he/she will be excluded from the actual lot of the double degree

program. The Credits obtained in TUL will be accredited in his/her TUL student career according to the local rules

At the end of the first year, if a TUL student participating to the program has not passed exams for a total of at least 52 ECTS he/she will be excluded from the actual lot of the double degree program. The Credits obtained in TUL will be accredited in his/her TUL student career according to the local rules.

At the end of the second year, if a TUL student participating to the program has not passed exams/stages for a total of at least 100 ECTS he/she will be excluded from the double degree program. The Credits obtained in UNINA will be accredited in his/her TUL student career as for Erasmus+ courses.

At the end of the second year, if a TUL student participating to the program has obtained at least a total of 100 ECTS (with at least 38 ECTS obtained in UNINA) he/she will be allowed to continue the double degree program for an additional academic year. At the end of this additional academic year if he/she has not completed the program, he/she will be excluded from the double degree program. The Credits obtained in UNINA will be accredited in his/her TUL student career as for other Erasmus+ courses.

Article 4. Start of the program

The Double degree program will start in the academic year 2016-17.

Article 5. Duration

The program is valid for four academic years from the signature date, and can be renewed if both Parties agree.

Appendix 1

Detailed description of the double degree program for the UNINA students:

UNINA STUDENTS						ECTS Unina	ECTS TUL
Course	ECTS	Year	Lect. [h]	Lab. [h]	Location		
Architettura dei Sistemi Integrati	9	1	55	17	UNINA	9	0
Misure Elettroniche	9	1	55	17	UNINA	9	0
Course from Table UNINA-A	9	1			UNINA	9	0
Micro and Nanotechnology for Electronics	5	1	15	45	TUL	0	5
Microassembly technology	5	1	15	45	TUL	0	5
Equipment design and Material Engineering	5	1	15	45	TUL	0	5
Elective courses from TUL Table 1c vs. Table 1d	7	1	45	60	TUL	0	7
Thermal Management	4	1	10	30	TUL	0	4
Electromagnetic Compatibility	4	1	30	30	TUL	0	4
						27	30
Design of Electronic Circuits and Systems	9	2	48	24	UNINA	9	0
Power devices and circuits *	9	2	54	18	UNINA	9	0
Integrated photonics	9	2	65	7	UNINA	9	0
System on Chip	9	2	45	27	UNINA	9	0
Elective course from TUL Table 2a	4	2	30	30	TUL	0	4
Elective course from TUL Table 2b	3	2	15	30	TUL	0	3
Stage (TUL: PBL)	9	2		95	TUL	0	9
Thesis	11	2			TUL	0	11
* Composed by 3CFU of 'Power Circuits' and 6CFU of 'Power Devices'.						36	27
Total ECTS @UNINA	63						
Total ECTS @TUL	57						
Total ECTS	120						
Table UNINA-A: elective courses							
Course	ECTS	Lect. [h]	Lab. [h]				
Trasmissione del Calore	9	45	27				
Fisica dello Stato Solido	9	53	19				
Chimica	9	55	17				
Real and Functional Analysis	9	72	0				
Geometria ed Algebra II	9	50	22				
Modelli Numerici per i Campi	9	50	22				
Table TUL 1c: elective courses							
Course	ECTS	Year	Lect. [h]	Lab. [h]	Location		
CAD Tools for Electronics and Microelectronics	3	1	15	30	TUL		
Flexible Electronics	4	1	30	30	TUL		
Table TUL 1d: elective courses							
Course	ECTS	Year	Lect. [h]	Lab. [h]	Location		
Measurement-Control and PLC Systems	3	1	15	30	TUL		
Flexible Optoelectronics	2	1	15	15	TUL		
Introduction to Textronics	2	1	15	15	TUL		
Table TUL 2a: elective courses							
Course	ECTS	Year	Lect. [h]	Lab. [h]	Location		
Photonics and Optical Fiber Technology	4	2	30	30	TUL		
Telecommunication Network Design	4	2	30	30	TUL		
Table TUL 2b: elective courses							
Course	ECTS	Year	Lect. [h]	Lab. [h]	Location		
Medical Electronic Equipment	3	2	15	30	TUL		
Design of Photovoltaics Elements and Systems	3	2	15	30	TUL		

Detailed description of the double degree program for the TUL students:

TUL STUDENTS							ECTS	ECTS
Course	ECTS	Year	Lect. [h]	Lab. [h]	Semester	Location	Unina	TUL
Architecture of Integrated Systems (UNINA)	4	1	50	0	1	TUL	0	4
Electronic system design with the use of VHDL	4	1	10	30	1	TUL	0	4
Mathematics for Advanced Signal Processing	4	1	30	30	1	TUL	0	4
Elective courses from TUL Table 1a vs. Table 1b	14	1			1	TUL	0	14
Professional Language Skills	2	1	0	30	1	TUL	0	2
Industrial Placement	2	1			1	TUL	0	2
Micro and Nanotechnology for Electronics	5	1	15	45	2	TUL	0	5
Microassembly technology	5	1	15	45	2	TUL	0	5
Equipment design and Material Engineering	5	1	15	45	2	TUL	0	5
Elective course from TUL Table 1c vs. Table 1d	7	1			2	TUL	0	7
Thermal Management	4	1	10	30	2	TUL	0	4
Electromagnetic Compatibility	4	1	30	30	2	TUL	0	4
							0	60
Design of Electronic Circuits and Systems	9	2	48	24	1	UNINA	9	0
Power Circuits *	3	2	12	12	1	UNINA	3	0
Integrated photonics	9	2	65	7	1	UNINA	9	0
System on Chip	9	2	45	27	1	UNINA	9	0
Power devices *	6	2	42	6	2	UNINA	6	0
Elective block from Table 3	4	2			2	UNINA	4	0
Stage EC	9	2			2	UNINA	9	0
Thesis	11	2			2	UNINA	11	0
* 'Power Circuits' and 'Power Devices' compose the 'Power Devices and Circuit' course offered to the UNINA students.							60	0
Total ECTS @UNINA	60							
Total ECTS @TUL	60							
Total ECTS	120							
Table TUL 1a: elective courses								
Course	ECTS	Year	Lect. [h]	Lab. [h]	Semester	Location		
Design of Photovoltaics Elements and Systems	3	1	15	30	1	TUL		
Photonics and Optical Fiber Technology	3	1	15	30	1	TUL		
Telecommunication Network Design	4	1	30	30	1	TUL		
Advanced Electronics Metrology	2	1	15	15	1	TUL		
Elements of Microwave Technique	2	1	15	15	1	TUL		
Table TUL 1b: elective courses								
Course	ECTS	Year	Lect. [h]	Lab. [h]	Semester	Location		
Basic of Photovoltaics	3	1	15	30	1	TUL		
Optical Networks	3	1	15	30	1	TUL		
Wireless Access and Localisation	4	1	15	45	1	TUL		
Microwave Measurement	2	1	15	15	1	TUL		
Microwave Elements Design	2	1	15	15	1	TUL		
Table TUL 1c: elective courses								
Course	ECTS	Year	Lect. [h]	Lab. [h]	Semester	Location		
CAD Tools for Electronics and Microelectronics	3	1	15	30	2	TUL		
Flexible Electronics	4	1	30	30	2	TUL		
Table TUL 1d: elective courses								
Course	ECTS	Year	Lect. [h]	Lab. [h]	Semester	Location		
Measurement-Control and PLC Systems	3	1	15	30	2	TUL		
Flexible Optoelectronics	2	1	15	15	2	TUL		
Introduction to Textronics	2	1	15	15	2	TUL		
Table 3								
Course	ECTS	Year	Lect. [h]	Lab. [h]	Semester	Location		
Autonomous Energy Sources and Optoelectronics Devices	4	2	60	0	2	UNINA		
Mobile Technologies	4	2	60	0	2	UNINA		
Microcontrollers, Sensors and Actuators	4	2	60	0	2	UNINA		