

REP. 4821/2014  
PROT. 60254/2014  
REQ. 623/2014

**AGREEMENT OF INTERUNIVERSITY COOPERATION  
FOR THE GRANTING OF A DOUBLE DEGREE  
(2ND CYCLE)**



**Between**

Alma Mater Studiorum – Università di Bologna (hereafter referred to as “University of Bologna”), represented by its Rector Prof. Ivano Dionigi, Via Zamboni 33 – 40126 Bologna, Italy

**and**

Facultad de Ciencias Exactas, Físicas y Naturales - Universidad Nacional de Córdoba (hereafter referred to as “FCEFYN”), represented by its Dean Prof. Ing. Roberto Terzariol, Av. Veléz Sarsfield 1611, Ciudad Universitaria, Córdoba, Argentina



Together named “the Parties”

**Provided that**

- the University of Bologna and the FCEFYN are interested in further developing their collaboration and cultural exchange partnership, which was established by the Cooperation Agreement between University of Bologna and University of Córdoba in 2005;
- the Italian Ministerial Decree “DM 270/04” allows Italian universities to jointly grant degrees (2<sup>nd</sup> cycle) with other foreign universities;
- As part of the autonomy of the National University of Córdoba enshrined in the Constitution As part of the Honorable Supreme Council Resolution 6/2012, which delegates the signing of agreements specific to Deans.
- the “Scuola di Ingegneria e Architettura” of the University of Bologna and the “Facultad de Ciencias Exactas, Físicas y Naturales” of the

University of Córdoba have a common interest in creating an integrated study programme in the fields of mechanical and aerospace engineering, by which enrolled students of both Universities will be able to get a double degree qualification;

- the University of Bologna and the FCEFyN, with their resources and funds and in accordance with the law and regulations of their respective country, shall collaborate and host all students, faculty members and administrative staff who participate in the mobility programme as described in this Agreement;

**It is agreed and stipulated as follows:**

#### **Art. 1 - Preamble**

Preamble and Annexes are an integral part of this Agreement.

#### **Art. 2 – Objective of the Agreement**

The Parties agree to establish an integrated study programme which provides for the exchange of applicant students for a period of two semesters, at the end of which both Universities will grant a degree, to be the equivalent of a 2<sup>nd</sup> cycle Degree: “Laurea Magistrale in Ingegneria Meccanica” or “Laurea Magistrale in Aerospace Engineering” of University of Bologna, and “Titulacion de grado Carrera de Ingeniero Mecánico” or “Titulacion de grado Carrera de Ingeniero Aeronàutico” of FCEFyN.

The Laurea Magistrale at University of Bologna is a 2-year degree programme for a total of 120 ECTS credits. The “Laurea Magistrale in Ingegneria Meccanica” is active both at Bologna Campus and at Forlì Campus of the University of Bologna, with different study plans (reported in the Annex 1 part A and part B, respectively) and the exchange students may



apply for one of the two locations. The “Laurea Magistrale in Aerospace Engineering” is active at Forlì Campus (with the study plan reported in the Annex 1 Part C).

The “Titulacion de grado Carrera de Ingeniero Mecànico” at FCEFyN is a 5-year degree programme for a total of 300 ECTS credits (corresponding to about 150 Argentine puntos). The “Titulacion de grado Carrera de Ingeniero Aeronàutico” at FCEFyN is a 5-year degree programme for a total of 300 ECTS credits (corresponding to about 150 Argentine puntos).

### **Art. 3 - Students**

#### **3.1 Students Exchange**

The exchange should be balanced and involve an equivalent number of students from both Universities, where possible.

The University of Bologna and the FCEFyN agree that the number of participating students will not be more than 12 units from each university per academic year. During the selection phase, the University of Bologna will assign such students to the Bologna and Forlì Campuses, on the basis of the students' applications and the rules of the Campuses. Parties shall be able to jointly agree a higher number of participants upon a notice exchange between the Parties.

All exams successfully passed at the host partner University by the student shall be automatically recognized by the home University.

Students involved in the mobility programme shall also enjoy the benefits and shall be likewise subject to the regulations and norms which are in force in the Universities/Institutions concerned by the programme.

#### **3.2 Selection of students**



Students admitted to the double degree programme will be selected according to the following procedure.

A first selection stage will be carried out by the home university according to its own criteria and modalities; home university will send to the host university a list of pre-selected candidates including CV and study plan for each candidate at least 3 months before the start of the mobility period. The study plan includes both student's career and learning agreement for the exchange period to be spent at the host university.

The host university will evaluate the documentation and will send the names of selected candidates and study plans (with possible amendments) at least 2 months before the start of the mobility period.

### **3.3 Enrolment and Mobility**

Students from the University of Bologna who want to attend the integrated study programme have to be regularly enrolled at the degree programme “Laurea Magistrale in Ingegneria Meccanica” or “Laurea Magistrale in Aerospace Engineering”, must have an adequate knowledge of the Spanish language at a level not lower than CEFR B1 and must be entitled of a valid visa or residence permit.

Students shall be transferred to the FCEFyN in order to attend the teaching activities offered within the degree programme “Titulacion de grado Carrera de Ingeniero Mecánico” or “Titulacion de grado Carrera de Ingeniero Aeronáutico” of the University of Córdoba as described in the correspondence tables annexed to this agreement (Annex 1, part A for Bologna Campus and Annex 1, part B and C for Forlì Campus).



Students will spend two semesters at FCEFyN and must obtain at least 24 and no more than 30 Argentine puntos (equivalent to at least 48 and no more than 60 ECTS), including possible internship and/or activities related to the Master's thesis work.

Students from the FCEFyN who want to attend the integrated study programme have to be regularly enrolled at the fourth or fifth year of the degree programme “Titulacion de grado Carrera de Ingeniero Mecànico” or “Titulacion de grado Carrera de Ingeniero Aeronàutico” (corresponding to the first or second year of University of Bologna’s 2<sup>nd</sup> cycle degree programme), must have obtained a minimum of 180 ECTS, corresponding to about 90 Argentine puntos, within the degree programme “Titulacion de grado Carrera de Ingeniero Mecànico” or “Titulacion de grado Carrera de Ingeniero Aeronàutico”, and must be entitled of a valid visa or residence permit. Students attending the integrated study programme in the field of mechanical engineering must have an adequate knowledge of the Italian language at a level not lower than CEFR B1, while students attending the integrated study programme in the field of aerospace engineering must have an adequate knowledge of the English language at a level not lower than CEFR B2.

By submitting the certification attesting the achievement of 90 Argentine puntos released by FCEFyN, corresponding to 180 ECTS credits, students will be admitted to the 2<sup>nd</sup> cycle degree “Laurea Magistrale in Ingegneria Meccanica” or “Laurea Magistrale in Aerospace Engineering” of the University of Bologna. The recognition of the 180 ECTS is valid only for the



access to the 2<sup>nd</sup> cycle Italian degree programme but does not provide for the award of an Italian 1<sup>st</sup> cycle degree.

Students shall be transferred to the University of Bologna (Bologna or Forli Campuses) in order to attend the teaching activities provided by the degree programme “Laurea Magistrale in Ingegneria Meccanica” or “Laurea Magistrale in Aerospace Engineering” as described in the correspondence tables annexed to this agreement (Annex 1, part A for Bologna Campus and Annex 1, part B and C for Forli Campus).

Students will spend two semesters at the University of Bologna and must obtain at least 48 and no more than 60 ECTS (equivalent to at least 24 and no more than 30 Argentine puntos), including possible internship and/or activities related to the Master’s thesis work.

Students of the two partner universities will defend their final examination at the home university or at the host university according to the study plan approved by their home university. The ECTS/PUNTOS corresponding to the final thesis will be recognized only if it is included in the study plan, and if the student defends his/her final examination at the host university, according to its rules and regulations and in the presence of a co-supervisor from the home university (a video-conference connection can be allowed). The final thesis shall be written in English, Spanish or Italian language, or only in English for the “Laurea Magistrale in Aerospace Engineering”.

The Commissions in charge of the final examination may include a maximum of two teachers from the partner university, who must have previously participated into the integrated study programme.



If a student is no longer able to follow the agreed study plan in the specified time, the Home and the Host universities will explore any possible reasonable solutions to allow the student to complete the integrated study programme. If no reasonable solutions are possible, then the student's participation in the integrated study programme will be terminated. The Home university will make reasonable efforts to allow such a student to continue pursuing the study programme solely at the home University.

Students who, in order to complete their studies in the integrated study programme, need to extend their study period at the host University over the regular duration of the integrated study programme must properly renew their enrolment at the Home University.

### **3.4 Exemption from university admission fees**

Students will remain enrolled in their home university during the mobility period.

Students participating in the mobility programme shall be exempted from paying university admission fees at the host University, except for the degree granting fee if required.

All other charges, including health insurance, shall be borne by the students themselves.

### **3.5 Certifications**

Host Universities shall release and grant each mobility programme student a Transcript of Records indicating his/her attended teachings and his/her academic performances and number of credits obtained at the partner University.

### **3.6 Insurance obligation**



The Parties state that their respective regularly admitted students will be insured against any incident that they may suffer during their period of stay abroad for the activities concerned by this Agreement and that they are insured for legal liability against damage which they may involuntarily cause to third party (people or their properties).

### **3.7 Services offered**

Students participating into the mobility programme shall benefit from all services offered by the host University to its regular enrolled students.

### **3.8 Fellowship**

Each University can grant the available fellowships to their students who intend to participate into the study programme, on the basis of a proper selection procedure.

## **Art. 4 – Didactics**

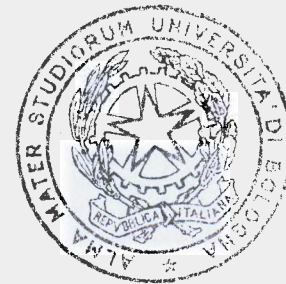
### **4.1 Study programmes**

The common integrated study programmes shall be attached to this Agreement (correspondence tables – Annex 1, part A for Bologna Campus and Annex 1, part B and C for Forli Campus).

Study programmes shall cover all the period from the beginnings of study to the last exams, to include the degree.

Exams and study period duration shall be organized in a balanced form and shall find justification and validation in both partner Universities, according to the provisions of articles 2 and 3 and to bonds included in the attached study programme.

In order to ensure that the study programmes meet the requirements needed for the awarding of the degree qualification by each partner university, the





integration of the study programmes will be individually defined for each single student participating in the study programme, by drawing up specific learning agreements based on a preliminary analytic recognition of the studies carried out at the home university. By means of the recognition it will be verified which teaching activities can be considered substituted by the studies carried out and, by means of the learning agreement, it will be defined which activities have to be carried out during the period of stay at the host university as well as their correspondence at the home university.

The correspondence tables can be modified by mutual consent between the Parties, to no detriment of students already enrolled.

#### **4.2 Credits transfer and grading scales**

The Parties agree to define the equivalence between their credits systems for transferring credits and to use a common grading conversion table created by comparing the different grading scales used by each Partner University. The grading conversion table applied is attached to the present Agreement (Annex 2).

#### **4.3 Award of the degree qualifications**

Students participating in the integrated study programme obtain the degree qualification - Laurea Magistrale in Ingegneria Meccanica /Titulacion de grado Carrera de Ingeniero Mecànico or Laurea Magistrale in Aerospace Engineering / Titulacion de grado Carrera de Ingeniero Aeronàutico - at the university where they defend the final dissertation and they can require the award of the degree at the other partner university on the basis of the related correspondence table annexed to this agreement, by submitting the relevant academic documentation as soon as the article 3.3 has been fulfilled.



References offices for students participating in the double degree programme are listed in the Annex 3 to this Agreement.

## **Art. 5 – Exchange of faculty members and administrative staff**

### **5.1 Exchange modalities**

The University of Bologna and the FCEFyN shall regulate the reception and employment of faculty members and administrative staff participating into the mobility programme under this Agreement, in conformity with the law and juridical rules in force in the country concerned under the exchange.

Personnel concerned under this Agreement will continue to comply with the contractual obligations with the home University and will continue to receive the due remuneration and to benefit from the rights they are entitled of for their juridical position, according to the legislative norms existing in the home country.

In any case, the home University shall consider the duration of the stay as ordinary service period for all purposes.

### **5.2 Activities for teachers and administrative personnel**

Faculty members and researchers can hold courses and lectures, carry out tutorship activities, participate in seminars, be part of exam, final thesis and doctorate commissions at the partner University, and take part into research activities and meetings for student exchange programme planning, evaluation and development, held at the partner University.

The administrative staff will have the possibility of participating in meetings for student exchange programme planning, evaluation and development and will be able to carry out special visits in order to analyse the management systems operating at the partner University.



The Parties agree that all the financial agreements will have to be negotiated and will depend on the availability of funds. For the expenses concerning the mobility of teaching staff members and research fellows, each university will cover all the costs for their own professors and research fellows according to the availability of Home and Host University funds.

During their period at the hosting University, the faculty members and the researchers participating in said exchange, to carry out the above-mentioned activities, shall be considered as staff “on a mission” abroad.

### **5.3 Insurance obligation**

The Parties state that their employees and staff (teachers and administrative personnel) will be insured against incidents that they may suffer during their stay abroad, for the activities under this Agreement, and for the civil liability for damage which they may involuntarily cause to third parties (people or their properties).

### **Art. 6 – Prevention and security**

Both parties shall supply each mobility programme participant with detailed information about the specific risks existing in the work environment in which they will operate and carry out their function and with necessary documentation about the prevention and emergency security measures and provisions in force in relation to their activity and about the individuals/subjects in charge of this, in conformity with the legislative norms and regulations in force in the country of the hosting University.

### **Art. 7 – Use of name / Logo**

Each party may use the logos, names and other marks of the other parties only in connection with the programme. Each party anticipates the other



party's participation in press announcements, marketing and other reasonable promotional activities involving the double-degree programme through the appropriate use of the logos, names and marks of the parties.

#### **Art. 8 – Intellectual Property**

Each of the parties acknowledges and agrees that any and all of the Intellectual Property Rights or other proprietary rights in respect of any literature, materials, research or teaching methods, procedures, processes and/or the learning experience in relation to or in connection with the Programme and any parts thereof, are and shall remain the sole property of its owner and, save as expressly set out herein, nothing in this Agreement is intended to transfer ownership or create any licensed rights under any such Intellectual Property Rights or other proprietary rights. The learning materials and any other literature, materials, research methods, procedures, processes or programmes in which a party has Intellectual Property Rights relating to or in connection with the Programme and which are disclosed to the other party pursuant to this Agreement may be used by the other party solely for the purposes of performing its obligations under, and during the period of, this Agreement and for no other purpose.

#### **Art. 9 – Other activities**

The Parties can extend the cooperation agreement for other purposes beyond the student exchange. Further cooperation projects, including intensive courses, distance teachings, joined researches, organization of seminars, symposia, and interviews on common interest topics and all other activities consolidating the cooperation, will be encouraged by both parties. These projects will be subject to specific addenda to this Agreement document,



which will be stipulated by both parties. Both parties agree to promote this programme in their catalogues and websites. All costs will be maintained by the individual institutions, unless otherwise specified in writing and agreed upon by both parties.

**Art. 10 – Responsible for the Agreement**

Each University shall appoint a coordinator for the Cooperation Agreement.

**Art. 11 – Evaluation of the programme**

The Parties will consult each other when appropriate, but at least once a year, in order to evaluate the programme development, to draw up a report about the ongoing initiatives and to elaborate other cooperation programmes.

**Art. 12 – Controversies**

In the event of any controversy arising from this agreement the Parties will endeavour to resolve the matter amicably and in good faith.

**Art. 13 – Duration of the Agreement**

This Agreement will operate from the last date of signing and will be effective for a period of five years from academic year 2014/2015. This Agreement may be extended by mutual written agreement between the Parties.

In particular, as regards students enrolled at University of Bologna, it will be effective for students who will attend the second year of the Laurea Magistrale during academic year 2014/2015 until 2018/2019.

This Agreement may be terminated at the request of either party provided that a minimum of six months' prior written notice is given to the other party to enable satisfactory arrangements to be put in place for existing Students, and those to whom an offer of a place on the Programme has been formally made.



Both parties shall be equally responsible for such arrangements. Any modification or termination of the Agreement shall be carried out in such a way as to ensure no damage for the participants in the programmes already underway. If any of the partner institutions wishes to withdraw, it must be guaranteed that all the students admitted to this institution will be able to complete their studies in the normal way.

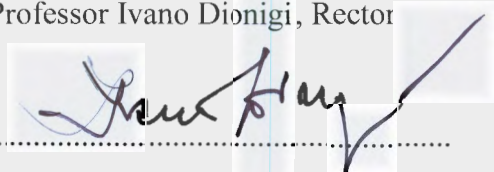
**Art. 14 – Copies and language**

This Agreement is subscribed in two originals in English language and two originals in Spanish language. The English original copies are the only ones valid for the purposes of law.

Bologna, date ..... 02 OTT. 2014

ALMA MATER STUDIORUM – UNIVERSITÀ DI BOLOGNA

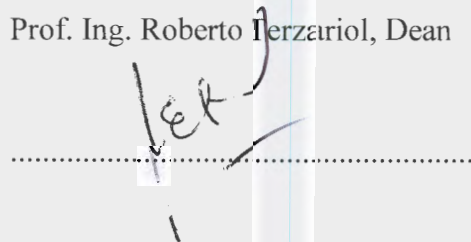
Professor Ivano Dionigi, Rector



Córdoba, date .....

FACULTAD DE CIENCIAS EXACTAS, FÍSICAS Y NATURALES

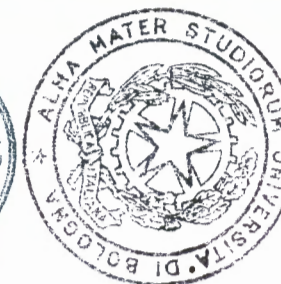
Prof. Ing. Roberto Terzariol, Dean



# ANNEX 1 – EXCHANGE PROGRAM CORRESPONDANCE TABLES

## PART A, MECHANICAL ENGINEERING, BOLOGNA CAMPUS:

UNIBO - MECCANICA LM - BOLOGNA CAMPUS				UNC - MECANICA	
TIPOLOGIA	INSEGNAMENTI	SSD	ECTS	ASIGNATURAS (obligatorias)	PUNTOS
INSEGNAMENTI OBBLIGATORI (48 ECTS)	DISEGNO DI MACCHINE M	ING-IND/15	6	DISEÑO Y PROYECTO MECANICO I	3
	MACCHINE M	ING-IND/08	6	MÁQUINAS I	3
	MECCANICA DELLE MACCHINE M	ING-IND/13	6	VIBRACIONES MECÁNICAS Y DINÁMICA DE MAQUINAS	3
	IMPIANTI INDUSTRIALI M	ING-IND/17	6	ORGANIZACION INDUSTRIAL	3
	LINGUA STRANIERA INGLESE B2		6	IDIOMA INGLES II/PORTUGUES	2
	CONTROLLI AUTOMATICI M	ING-INF/04	6	SISTEMAS DE CONTROL	3
	COSTRUZIONE DI MACCHINE M	ING-IND/14	6	CALCULO ESTRUCTURAL I	3
	TECNOLOGIE SPECIALI M	ING-IND/26	6	PROCESOS DE MANUFACTURA II	4
Formative a scelta (6 ECTS)	1 INSEGNAMENTO A SCELTA LIBERA (vedi tabella)		6	GESTION DE CALIDAD	3
Formative obbligatorie del Curriculum "Macchine a Fluido" (18 ECTS)	MOTORI A COMBUSTIONE INTERNA E PROPULSORI IBRIDI M	ING-IND/08	6	TRANSFERENCIA DE CALOR Y MASA	3
	SPERIMENTAZIONE E CALIBRAZIONE DI MOTORI A COMBUSTIONE INTERNA M	ING-IND/08	6	MAQUINAS II	4
	IMPATTO AMBIENTALE M	ING-IND/08	6	INSTALACIONES ELECTRICAS	4
A scelta del Curriculum "Macchine a Fluido" (6 ECTS)	OLEODINAMICA E PNEUMATICA M	ING-IND/08	6	SEGURIDAD, HIGIENE INDUSTRIAL Y MEDIO AMBIENTE	2
A scelta libera consigliate (12 ECTS)	INGEGNERIZZAZIONE DI PRODOTTO M	ING-IND/15	6	SISTEMAS NEUMÁTICOS E HIDRÁULICOS	3
	COSTRUZIONE DI MACCHINE II M	ING-IND/14	6	DISEÑO Y PROYECTO MECANICO II	4
Tipologia F	TIROCINIO/LABORATORIO		6	CALCULO ESTRUCTURAL II	3
Tipologia F + E	TIROCINIO/LABORATORIO (6) + TESI (18)		24	INGENIERIA LEGAL	2
				PRACTICA SUPERVISADA (8) + PROYECTO INTEGRADO (4)	12
					64
				120	



## PART A, MECHANICAL ENGINEERING, BOLOGNA CAMPUS (continued):

### ELECTIVE COURSES

UN INSEGNAMENTO A SCELTA TRA QUELLI ELENCATI		
INSEGNAMENTO	SSD	ECTS
APPLICAZIONI INDUSTRIALI DEI PLASMI M	ING-IND/18	6
AZIONAMENTI ELETTRICI M	ING-IND/32	6
CHIMICA DEI PROCESSI DI COMBUSTIONE M	CHIM/07	6
CORROSIONE E PROTEZIONE DEI MATERIALI M	ING-IND/22	6
GESTIONE DELL'INNOVAZIONE E DEI PROGETTI M	ING-IND/35	6
PIASTRE E GUSCI M	ICAR/08	6
SCIENCE AND TECHNOLOGY OF COMPOSITE MATERIALS M	ING-IND/22	6
AERODINAMICA M	ING-IND/06	6
BIOMECCANICA COMPUTAZIONALE E DELLA FUNZIONE MOTORIA M	ING-IND/34	6
METALLURGIA MECCANICA M	ING-IND/21	6
PROGETTAZIONE DI SISTEMI DI TRASPORTO M	ICAR/05	6
VALORIZZAZIONE DELLE RISORSE PRIMARIE E SECONDARIE M	ING-IND/29	6
COMPLEMENTI DI ANALISI MATEMATICA M	MAT/05	6
COMPLEMENTI DI GEOMETRIA M	MAT/03	6
FISICA MATEMATICA M	MAT/07	6
METODI NUMERICI M	MAT/08	6





# PART B, MECHANICAL ENGINEERING, FORLI' CAMPUS:

UNIBO - MECCANICA LM - CAMPUS FORLI'

UNC - MECANICA

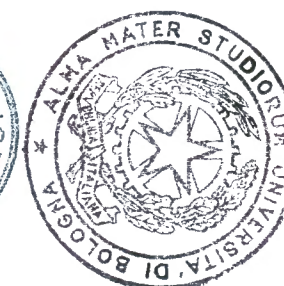
INSEGNAMENTO		SSD	CFU	ASIGNATURAS (obligatorias)	PUNTOS	PUNTOS riconoscibili @ unibo	
ATTIVITA' CARATTERIZZANTI (TAF B) 48 CFU - Ambito 215: ING. MECCANICA	O	TECNOLOGIE SPECIALI E DEI MATERIALI COMPOSITI LM	ING-IND/16	6	PROCESOS DE MANUFACTURA II	4	3
	O	COSTRUZIONE DI MACCHINE LM	ING-IND/14	9	CALCULO ESTRUCTURAL I	3	3
				-	CALCULO ESTRUCTURAL II	3	3
	O	MECCANICA E DINAMICA DELLE MACCHINE LM	ING-IND/13	9	VIBRACIONES MECÁNICAS Y DINÁMICA DE MAQUINAS	3	3
	O	IMPIANTI MECCANICI E LOGISTICA LM	ING-IND/17	9	ORGANIZACION INDUSTRIAL	3	3
				-	GESTION DE CALIDAD	3	3
	O	SISTEMI ENERGETICI E MACCHINE LM	ING-IND/08	9	MAQUINAS I	3	3
SG	METODI DI PROGETTO PER L'INGEGNERIA INDUSTRIALE LM	ING-IND/15	6	DISÑO Y PROYECTO MECANICO II	4	3	
			48		26	24	
ATTIVITA' AFFINI (TAF C) 24 CFU - Ambito: 1144	O	MODELLI FISICO-MATEMATICI PER L'INGEGNERIA INDUSTRIALE LM	MAT/07	6	ANALISIS MATEMATICO III	4	3
	O	CONVERSIONE ELETTROMECCANICA DELL'ENERGIA LM	ING-IND/32	6	INSTALACIONES ELÉCTRICAS	4	3
	SG	TERMOFLUIDODINAMICA AVANZATA E CONTROLLI TERMICI LM	ING-IND/10	6	TRANSFERENCIAS DE CALOR Y MASA	3	3
	SG	MECCANICA DEI FLUIDI E CONTROLLI IDRAULICI	ICAR/01	6	SISTEMAS NEUMÁTICOS E HIDRÁULICOS	3.5	3
			24		14.5	12	
A scelta libera (TAF D) 18 CFU Ambito: 1008	SL	Insegnamento a SCELTA LIBERA		6	INGENIERIA LEGAL	2	1.5
					SEGURIDAD, HIGIENE INDUSTRIAL Y MEDIO AMBIENTE	2	1.5
	SL	Insegnamento a SCELTA LIBERA		6	SISTEMAS DE CONTROL	3	3
	SL	Insegnamento a SCELTA LIBERA		6	MAQUINAS II	4	3
			18		11	9	
Lingua	O	LINGUA STRANIERA INGLESE B2		6	IDIOMA INGLES II/MODULO DE IDIOMA PORTUGUES	3	3
Tipologia F (6 CFU)	O	TIROCINIO/LABORATORIO (6)		6	PRACTICA SUPERVISADA (8.5)	13	12
Tipologia E (18 CFU)	O	TESI (18)		24	PROYECTO INTEGRADO (4.5)		

TOT 120

67.5

60

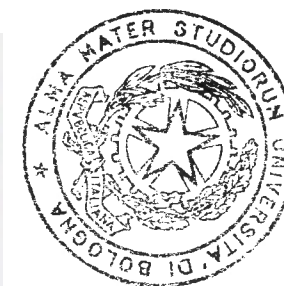
- O Obbligatorio
- SG Scelta Guidata
- SL Scelta Libera



## PART B, MECHANICAL ENGINEERING, FORLI' CAMPUS: (continued):

### ELECTIVE COURSES

Insegnamenti a Scelta Libera	SSD	CFU
Analisi numerica LM	MAT/08	6
Motori a combustione interna LM	ING-IND/08	6
Impianti termotecnici LM	ING-IND/10	6
Azionamenti Elettrici LM	ING-IND/32	6
Teoria dei sistemi e dei controlli per l'automazione LM	ING-INF/04	6
Meccanica dei Robot e delle Macchine Automatiche LM	ING-IND/13	6
Controllo MCI LM	ING-IND/09	6
Automazione Industriale LM	ING-INF/04	6
Ingegneria e Tecnologie dei sistemi di controllo LM	ING-INF/04	6



## PART C, AEROSPACE ENGINEERING, FORLI' CAMPUS:

### UNIBO - AEROSPACE LM

### UNC - AERONAUTICA

	CORSI	CFU	ASIGNATURAS (obligatorias)	PUNTOS	NOTE
ESAMI OBBLIGATORI (45 ECTS)	APPLIED AERODYNAMICS A	6	DINAMICA DE LOS GASES	4	1 Punto = 2 ECTS
	APPLIED AERODYNAMICS B	6	AERODINAMICA I	4	
	NUMERICAL ANALYSIS	6	METODOS NUMERICOS	4	
	MATHEMATICAL METHODS FOR ENGINEERING	6			
	AEROSPACE PROPULSION SYSTEM	9	PROPULSION	4	
	ATMOSPHERIC FLIGHT DYNAMICS A	6	MECANICA DEL VUELO	4	
	ATMOSPHERIC FLIGHT DYNAMICS B	6	ISTRUMENTOS Y AVIONICA	3	
A scelta libera (12 ECTS)	2 ESAMI A SCELTA (vedi tabella)	12	ECONOMIA Y PRODUCCION INDUSTRIAL	2	
			TECNOLOGIA MECANICA II	3	
			SEGURIDAD INDUSTRIAL Y AMBIENTAL E HIGIENE	2	
ESAMI OBBLIGATORI (27 ECTS)	AEROSPACE STRUCTURES A	6	CALCULO ESTRUCTURAL I	4	
	AEROSPACE STRUCTURES B	6	CALCULO ESTRUCTURAL II	4	
	AUTOMATIC FLIGHT CONTROL	6	SISTEMAS Y EQUIPOS DEL AVION	3	
	DESIGN METHODS IN THE AEROSPACE INDUSTRY	9	CONSTRUCTION DE AVIONES	3	
A scelta libera (D) 6 ECTS	1 ESAME A SCELTA (vedi tabella)	6	CALCULO ESTRUCTURAL III	3	
			LEGISLACION Y ETICA PROFESIONAL	2	
Tipologia F+E	TIROCINIO/PREPARAZIONE ALLA TESI (12) + TESI (18)	30	PRACTICA SUPERVISADA (8) + PROYECTO INTEGRADO (4)	12	

120

61



## ELECTIVE COURSES

2	Experimental Methods in Aerodynamics	Sugerito al I anno	ING-IND/06	D	6
2	Simulation and Modeling in Fluid Dynamics	Sugerito al I anno	ING-IND/06	D	6
1	Aerospace Technologies and Materials	Sugerito al II anno	ING-IND/04	D	6
2	Spacecraft Orbital Dynamics and Control	Sugerito al I anno	ING-IND/05	D	6
1	Spacecraft Attitude Dynamics and Control	Sugerito al II anno	ING-IND/05	D	6
2	Radio Communication and Radar Systems	Sugerito al I anno	ING-INF/03	D	6



**ANNEX 2 - GRADING CONVERSION TABLES**

Grading conversion table University of Bologna - University of Cordoba	
Bologna	Cordoba
30 e 30	
E	10
LODE	
29	
28	9
27	
26	8
25	
24	7
23	
22	6
21	
20	5
19	
18	4

Grading conversion table University of Cordoba - University of Bologna	
Cordoba	Bologna
10	30
9	28
8	26
7	24
6	22
5	20
4	18



**ANNEX 3 - Reference offices for students participating in the double degree programme**

• **University of Bologna, Bologna Campus**

AFORM — Settore Unità di servizio didattico dell'area scientifica

Viale Risorgimento, 2 Bologna

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tel. +39 051 20 9 3946



• **University of Bologna, Forlì Campus**

Ufficio Relazioni Internazionali - URI

Padiglione Melandri - Piano Terra

Piazzale Solieri 1, 47121 Forlì (FC)

Tel. +39 0543 3 74847 - Fax +39 0543 3 74801

e-mail: [campusforli.uri@unibo.it](mailto:campusforli.uri@unibo.it)

web: <http://www.unibo.it/it/campus-forli/servizi-di-campus/ufficio-relazioni-internazionali-uri>



• **FCEFN – University of Cordoba, Ciudad Universitaria**

Facultad de Ciencias Exactas, Físicas y Naturales

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Código Postal: 5000

e-mail: [decano@efn.uncor.edu](mailto:decano@efn.uncor.edu)

Tel. +54 351 4334141/4152

• **FCEFN – University of Cordoba, Centro**

Oficina de Relaciones Internacionales

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