UNIVERSITÀ DEGLI STUDI DI FERRARA

DIPARTIMENTO DI

FISICA E SCIENZE DELLA TERRA

Master's Degree in PHYSICS

(Corso di Laurea Magistrale in **FISICA)**

Classe LM-17 [*Lauree Magistrali in Fisica*] *(D.M. 270/04)*

DOUBLE DEGREE WITH UNIVERSITÈ PARIS-SUD *

(http://web.fe.infn.it/dmaster/)

Course Description
Academic year 2013/2014

Course Web Site	**http://www.unife.it/scienze/lm.physics**
Course coordinator	Prof. Raffaele Tripiccione **tripiccione@fe.infn.it**
Teaching manager	Dott.ssa Elisa Marchetti Dip. di Fisica e Scienze della Terra – Via Saragat, 1 44122 Ferrara E-mail: **elisa.marchetti@unife.it** **http://www.unife.it/scienze/lm.physics/teaching-manager**
Secretariat	Via Savonarola, 9/11 – 44121 Ferrara E-mail: **segreteria.scienze@unife.it** **http://www.unife.it/studenti/offerta-formativa/segreterie-studenti**

Deadlines:
Admission applications can be submitted on line from July 29th to September 30th, 2013.

Late applications are possible from October 1st 2013 to January 15th, 2014. Late applications must be accompanied by a non refundable service charge of 50.00 Euro.

Applications are also invited by applicants who do not hold a B. Sc. Degree, but plan to obtain it before march 31st, 2014.

For further informations:
http://www.unife.it/studenti/immatricolazioni-e-iscrizioni/pre-iscrizioni-a-un-corso-di-laurea-magistrale
- The deadline for registration for all students that have applied within the deadline is March 31st, 2014. For further informations:
http://www.unife.it/studenti/immatricolazioni-e-iscrizioni/immatricolazione-a-corsi-di-laurea-magistrale-non-a-ciclo-unico

Assessment of the applicants' degrees and academic background	The first round of interiews to assess the applicants' degrees and academic backgorund is scheduled on Wednesday, October 9th, 2013, at 15:00; Room 412, Building C, Dipartimento di Fisica e Scienze della Terra. **The schedule of successive interviews will be made available on the Course web page**. **For further information:** **http://www.unife.it/scienze/lm.physics/learn-more-about-masters-**

	degree-in-physics/application-and-scientific-background-required-for-acceptance **Students holding disabilities should consult the following web page (as per law 104/99 and law 170/2010):** **http://www.unife.it/studenti/sms/servizio-disabilita/richiesta-ausili**
Teaching timetable	**1° Semester**: September 30th, 2013 – January 10th, 2014 **2° Semester :** February 24th, 2014 – June 6th, 2014 All information on the teaching timetable are available at: **http://www.unife.it/scienze/lm.physics/organisation-of-teaching-activities/calendar-of-lectures** Each teaching semester is followed by an exam session
Exam sessions	**Winter Session:** January 13th – February 21st, 2014 **Summer Session:** June 9th – July 31st, 2014 **Fall Session:** September 1st**,** – September 26th, 2014 All informations on exam schedules and on how to enter exams are available at: **http://www.unife.it/scienze/lm.physics/organisation-of-teaching-activities/exam-sessions**
Study plan submission	**All students must submit their study plan not later than November 30th, 2013.** For more information: **http://www.unife.it/studenti/immatricolazioni-e-iscrizioni/piani-di-studio**

Course structure

The Master's Degree in Physics (Laurea Magistrale in Fisica (LM)) is normally obtained in 2 years after acquiring 120 credits. A student who has obtained all required credits can obtain the LM even before completing two years at the school.

Legenda

Academic activities	One credits corresponds to: - 7 hours of lectures (T); - 9 hours of supervised exercises and/or labs (P). **B = Basic** **B1 – Experimental and applied physics** **B2 – Theoretical and fundamental physics** **B3 – Microphysics and the structure of matter** **B4 – Astrophysics, Geophysics, Space physics** **C = Related or supplemental** **D** = **Optional (Free choice)** **E1** = Foreign language **E2 = Preparation of the final exam** **F** = any study, work or experimental activity, not included in the previous classification, to improve abilities in languages, computing, networking, or aimed at future career prospects and the choice of a profession with a direct knowledge of the chosen field via, e.g., stages.
SSD: Settore Scientifico Disciplinare	

COORTE 2013

Students who have first registered in the academic year 2013/2014 take the following study plan

First year (active in the a.a. 2013-14)

Note: for every course the corresponding exam must be passed

Semester	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I	**Mathematical Methods of Physics** *(Metodi Matematici della Fisica)*	FIS/02	B2	**6**	6	0	42	Titarchuck L.
	Quantum Mechanics *(Meccanica Quantistica)*	FIS/02	B2	**6**	6	0	42	Moretti M.
	Solid state physics *(Fisica dello stato solido)*	FIS/03	B3	**6**	6	0	42	Spizzo F.
II	**Scattering Theory** *(Teoria dello scattering)*	FIS/02	B2	**6**	6	0	42	Drago A.
	Elements of subnuclear physics *(Elementi di Fisica delle particelle elementari)*	FIS/04	B3	**6**	6	0	42	CONTRATTO INFN (D. Bettoni)
	Advanced Electromagnetism *(Complementi di Elettromagnetismo)*	FIS/01	B1	**6**	6	0	42	Chiamata diretta (Piemontese L.)

In order to obtain 60 credits, each student may obtain the additional 24 credits as follows:

- **12 Credits choosing among the options available in Table I**

and

(Option 1)* - **6 Credits chosen among the courses (belonging to** SSD FIS/02-03-04-05-07) of one and only one of Tables **IIA-IIE and one free choice course (D type)** of 6 credits.

or

(Option 2)* - **12 Credits chosen among the courses (belonging to SSD FIS/02-03-04-05-07) of one and only one of Tables IIA-IIE**

(*) Students must take the same option in both years

Second year (active in a.a. 2014-15)

Note: for every course the corresponding exam must be passed

Semestre	Insegnamento	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/II	**F activities**		F	**3**				
	Final exam		E	**45**				

In order to obtain 60 credits, each student may obtain the missing 12 credits as follows:

(Option 1)* - **6 Credits chosen among the courses (belonging to** SSD FIS/02-03-04-05-07) of one and only one of Tables **IIA-IIE (the same as the one chosen in the fisrt year) and one free choice course (D type)** of 6 credits

or

(Option 2)* - **Free choice course (D type) for a total of 12 Credits**

*(*) **Students must take the same option in both years***

Table I

Note: for every course the corresponding exam must be passed

Semester/ Recomm. year	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/II sem 1 year	**High Energy Physics Laboratory** *(Laboratorio di fisica delle alte energie)*	FIS/01	B1	**12**	6	6	96	M. Fiorini
I/1	**Physics of complex systems and laboratory** *(Laboratorio di fisica dei sistemi complessi)*	FIS/01	B1	**6**	3	3	48	R. Tripiccione
I/1	**Physics of electronic devices** *(Fisica dei dispositivi elettronici)**	FIS/01	B1	**6**	6	0	42	CONTRATTO (Cotta R.)

II/1	**Relativity** *(Relatività)*	FIS/01	B1	**6**	6	0	42	P. Natoli
II/1	**Electron microscopy: theory and applications** *(Microscopie elettroniche: teoria e applicazioni)*	FIS/01	B1	**6**	3	3	48	CONTRATTO (Giberti)
II/1	**Semiconductor physics laboratory** *(Laboratorio di fisica dei semiconduttori)*	FIS/01	B1	**6**	3	3	48	A. Mazzolari
II/1	**Measures and Observation of Celestial X and Gamma Rays** *(Misure e osservazioni di raggi X e gamma celesti)*	FIS/01	B1	**6**	6	0	42	CONTRATTO (Frontera)
II/1	**Sensors: Physics and Technology** *(Sensori: fisica e tecnologia)*	FIS/01	B1	**6**	6	0	42	C. Malagù
I/1	**Statistics and probability** *(Statistica e probabilità)*	FIS/01	B1	**6**	6	0	48	V. Guidi *(Comunanza LM Ing. Meccanica)*
II/1	**Laboratory of archaeometry** *(Laboratorio di Archeometria)**	FIS/01	B1	**6**	5	1	44	F. Petrucci
II/1	**Space physics** *(fisica dello spazio)**	FIS/01	B1	**6**	6	0	42	CONTRATTO (Mandolesi)

*** Solo primo anno coorte 2013-14**

Table II A

Note: for every course the corresponding exam must be passed

Semester/ Recomm. year	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/2	**Applications of Quantum Field Theory** *(Applicazioni della teoria dei campi)*	FIS/02	C	**6**	6	0	42	R. Tripiccione
II/1	**Elements of Quantum Field Theory** *(Introduzione alla teoria dei campi)*	FIS/02	C	**6**	6	0	42	M. Moretti

Table II B

Note: for every course the corresponding exam must be passed

Semester/ Recomm. year	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/1	**Physics of critical phenomena** *(Fisica dei fenomeni critici)*	FIS/03	C	**6**	6	0	42	CONTRATTO (Zivieri)
II/1	**Magnetic Properties of Matter and Laboratory** *(Proprietà magnetiche della materia e laboratorio)*	FIS/03	C	**6**	3	3	48	P. Vavassori
I/1	**Surface physics and nanostructures** *(Fisica delle superfici e nanostrutture)*	FIS/03	C	**6**	6	0	42	CONTRATTO (Montoncello)

Table II C

Note: for every course the corresponding exam must be passed

Semester/ Recomm. year	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/2	**Phenomenology of strong interactions** *(Fenomenologia delle interazioni forti)*	FIS/04	C	**6**	6	0	42	Docenza gratuita INFN (Bettoni)
II/1	**Nuclear and subnuclear astrophysics** *(Astrofisica Nucleare e Subnucleare)*	FIS/04	C	**6**	6	0	42	G. Fiorentini
I/2	**Nuclear physics** *(Fisica Nucleare)*	FIS/04	C	**6**	6	0	42	A. Drago
II/2	**Phenomenology of electroweak interactions** *(Fenomenologia delle interazioni elettrodeboli)*	FIS/04	C	**6**	6	0	42	Docenza gratuita INFN (Bozzi)

Table II D

Note: for every course the corresponding exam must be passed

Semester/ Recomm. year	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/2	**Physical cosmology** *(Cosmologia)*	FIS/05	C	**6**	6	0	42	Chiamata diretta (Dolgov A.)

I/2	**Observational cosmology**	FIS/05	C	**6**	6	0	42	Not active in 2013/14 Rosati
II/1	**High energy astrophysics** *(Astrofisica delle alte energie)*	FIS/05	C	**6**	6	0	42	L. Titarchuk

Table II E

Note: for every course the corresponding exam must be passed

Semester/ Recomm. year	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/2	**Medical physics laboratory** *(Laboratorio di fisica medica)*	FIS/07	C	**6**	3	3	48	G. Di Domenico
II/1	**Radioactivity and dosimetry** *(Radioattività e dosimetria)*	FIS/07	C	**6**	6	0	42	M. Marziani
II/1	**Medical physics** *(Fisica medica)*	FIS/07	C	**6**	6	0	42	M. Gambaccini

COORTE 2012

Students who have first registered in the academic year 2012/2013 take the following study plan

First year (inactive)

Note: for every course the corresponding exam must be passed

Semester	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I	**Mathematical Methods of Physics** *(Metodi Matematici della Fisica)*	FIS/02	B2	**6**	6	0	48	Titarchuck L.
	Quantum Mechanics *(Meccanica Quantistica)*	FIS/02	B2	**6**	6	0	48	Moretti M.
	Solid state physics *(Fisica dello stato solido)*	FIS/03	B3	**6**	6	0	48	Spizzo F.
II	**Scattering Theory** *(Teoria dello scattering)*	FIS/02	B2	**6**	6	0	48	Drago A.
	Elements of subnuclear physics *(Elementi di Fisica delle particelle elementari)*	FIS/04	B3	**6**	6	0	48	Docenza gratuita INFN (Bettoni)
	Advanced Electromagnetism *(Complementi di Elettromagnetismo)*	FIS/01	B1	**6**	6	0	48	Chiamata diretta (Piemontese L.)

Second year (active in a.a. 2013/14)

Note: for every course the corresponding exam must be passed

Semester	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/II	**F activities**		F	**3**				
	Final Exam		E	**45**				

In order to obtain 60 credits, each student may obtain 12 additional credits as follows:

(Option 1)* - **6 Credits chosen among the courses (belonging to** SSD FIS/02-03-04-05-07) of one and only one of Tables **IIA-IIE (the same as the one chosen in the fisrt year) and one free choice course (D type)** of 6 credits

or

(Option 2)* - F**ree choice course (D type) for a total of 12 Credits**

*(*) **Students must take the same option in both years***

Table I ***Note: for every course the corresponding exam must be passed***

Semester/ Recomm. year	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/II sem 1 **year**	**High Energy Physics Laboratory** *(Laboratorio di fisica delle alte energie)*	FIS/01	B1	**12**	6	6	96	M. Fiorini
I/1	**Physics of complex systems and laboratory** *(Laboratorio di fisica dei sistemi complessi)*	FIS/01	B1	**6**	3	3	48	R. Tripiccione
II/1	**Relativity** *(Relatività)*	FIS/01	B1	**6**	6	0	42	P. Natoli
II/1	**Electron microscopy: theory and applications** *(Microscopie elettroniche: teoria e applicazioni)*	FIS/01	B1	**6**	3	3	48	CONTRATTO (Giberti)
II/1	**Semiconductor physics laboratory** *(Laboratorio di fisica dei semiconduttori)*	FIS/01	B1	**6**	3	3	48	A. Mazzolari
II/1	**Measures and Observation of Celestial X and Gamma Rays** *(Misure e osservazioni di raggi X e gamma celesti)*	FIS/01	B1	**6**	6	0	42	CONTRATTO (Frontera)
II/1	**Sensors: Physics and Technology** *(Sensori: fisica e tecnologia)*	FIS/01	B1	**6**	6	0	42	C. Malagù
II/1	**Microwave celestial measures and observations** *(Misure e osservazioni celesti a microonde)*	FIS/01	B1	**6**	6	0	42	NOT ACTIVE

I/1	**Statistics and Probability** *("Statistica e Probabilità")*	FIS/01	B1	6	6	0	48	V. Guidi *(Comunanza LM Ing. Meccanica)*
II/1	***Space physics* *** *Fisica dello spazio*	FIS/01	B1	6	6	0	42	CONTRATTO (Mandolesi)
I/1	**Physics of electronic devices *** *(Fisica dei dispositivi elettronici)*	FIS/01	B1	6	6	0	42	CONTRATTO (Cotta R.)
II/1	**Laboratory of archaeometry *** *(Laboratorio di Archeometria)*	FIS/01	B1	6	5	1	44	F. Petrucci

*** Solo per coorte 2013-14 (primo anno)**

Table II A

Note: for every course the corresponding exam must be passed

Semester/ Recomm. year	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/2	**Applications of Quantum Field Theory** *(Applicazioni della teoria dei campi)*	FIS/02	C	**6**	6	0	42	R. Tripiccione
II/1	**Elements of Quantum Field Theory** *(Introduzione alla teoria dei campi)*	FIS/02	C	**6**	6	0	42	M. Moretti

Table II B

Note: for every course the corresponding exam must be passed

Semester/ Recomm. year	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/1	**Physics of critical phenomena** *(Fisica dei fenomeni critici)*	FIS/03	C	**6**	6	0	42	CONTRATTO (Zivieri)
II/1	**Magnetic Properties of Matter and Laboratory** *(Proprietà magnetiche della materia e laboratorio)*	FIS/03	C	**6**	3	3	48	P. Vavassori
I/1	**Surface physics and nanostructures** *(Fisica delle superfici e nanostrutture)*	FIS/03	C	**6**	6	0	42	CONTRATTO (Montoncello)

Table II C

Note: for every course the corresponding exam must be passed

Semester/ Recomm. year	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/2	**Phenomenology of strong interactions** *(Fenomenologia delle interazioni forti)*	FIS/04	C	**6**	6	0	42	Docenza gratuita INFN (Bettoni)
II/1	**Nuclear and subnuclear astrophysics** *(Astrofisica Nucleare e Subnucleare)*	FIS/04	C	**6**	6	0	42	G. Fiorentini
I/2	**Nuclear physics** *(Fisica Nucleare)*	FIS/04	C	**6**	6	0	42	A. Drago
II/2	**Phenomenology of electroweak interactions** *(Fenomenologia delle interazioni elettrodeboli)*	FIS/04	C	**6**	6	0	42	Docenza gratuita INFN (Bozzi)

Tabella II D

Note: for every course the corresponding exam must be passed

Semester/ Recomm. year	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/2	**Physical cosmology** *(Cosmologia)*	FIS/05	C	**6**	6	0	42	Chiamata diretta (Dolgov A.)
I/2	**Observational cosmology * (Cosmologia osservativa)**	FIS/05	C	**6**	6	0	42	Not active in 2013/14 Rosati
II/1	**High energy astrophysics** *(Astrofisica delle alte energie)*	FIS/05	C	**6**	6	0	42	L. Titarchuk

*** coorte 2013-14 only**

Tabella II E

Note: for every course the corresponding exam must be passed

Semester/ Recomm. year	Course	SSD	Activity	Credits total	Credits (T)	Credits (P)	Teaching hours	Lecturer's name
I/2	**Medical physics laboratory** *(Laboratorio di fisica medica)*	FIS/07	C	**6**	3	3	48	G. Di Domenico

II/1	**Radioactivity and dosimetry** *(Radioattività e dosimetria)*	FIS/07	C	**6**	6	0	42	M. Marziani
II/1	**Medical physics** *(Fisica medica)*	FIS/07	C	**6**	6	0	42	M. Gambaccini

Additional information

D-type credits

Students can obtain 12 D-type credits (Free choice activities) by taking courses offered by other Triennale or Magistrale programmes at the University, or courses offered in the Physics programme belonging to other disciplinary sectors, as long as his/her choices are coherent with the educational goals of the Master's Degree in Physics.

The choice of the D-type credits must be submitted not later than November 30th, 2013. The choice shall be made on-line from the student's web page, which can be accessed from the site: **http://studiare.unife.it**

NOTE that it is not allowed to choose individual "modules" of integrated multimodule courses.

F-Type credits (Internships, stages and similar)

The **3 F-type credits** for learning activities aimed at improving/acquiring further **language skills, computing/networking capabilities and at preparation for a job via internships in Universities or stages in non-University organizations can be earned as explained in the following Table:**

	Course / Activity	**Foreign language, computing, job**	***SSD***	***Credits Max***
F1	Advanced English	Foreign language	L/LIN 06	**3** per certified course
F2	Stages of professional training in firms or non-University Research Centers.	Job		**3**
F3	Internships in Italian or foreign labs or Research Centers connected to Universities.	Job		**3**
F4	Credits from courses on computing and networking skills (P. Ex. Advanced ECDL certification; or, advanced courses on computing).	Computing	INF/01	3 per certified course

The Consiglio Unico di Corso di Studio (CCS) oversees the organizazion of stages and internships and also decides on its formal acknowledgment, taking in consideration that one month of full time activity corresponds to 6 credits.
The acknowledgment of F1 and F4-type activities must be requested to the Secretariat. These activities must be certified, and they must be assessed by the CCS as an integral part of the student's learning path.
For F2 (always) and F3 (only for internships in Universities other than Ferrara) activities, the student must prepare beforehand, together with the Teaching Manager, the plan of her/his activities.
For each of these activities, if not carried out at the University of Ferrara, beside the official tutor of the student another tutor will be appointed, chosen between the members of the host Institution.
The tutor will record in the students' on-line exam history, all the "F" earned credits in a single operation during the 2nd course year.

PIL

All students attending the second year may join the experimental project "Percorsi di Inserimento Lavorativo" (PIL). The PIL consists of a period of courses (from October to December) followed by a selection/matching with available jobs (January). A stage in a firm will follow (February to April) and then, when foreseen, a 12 months job contract. The educational phase will be properly certified and the whole stage period will be attested with credits assigned to the individual study plan.

Course priorities

No course in this program is preliminary to any other.

Exam priorities

There are no exam priorities

Faster or slower course schedule

The Master's Degree in Physics is normally obtained in two years of study, after obtaining 120 credits. A student can achieve the degree agreeing on an educational schedule of different time extent, within the boundaries described before. A student who does not want

	to follow the normal plan can choose: An **educational schedule longer than normal**, registering to a semester only or to individual courses. If a student chooses this option, and while he is in the school thecourse structure is modified, the student shall adapt to the new situation, following an assessment by the CCS. An **educational route shorter than normal** (but of at least one year), obtained by anticipating to the first year the educational activities normally done during the second year. A proposal must be submitted to the CCS who will make a decision on the proposal either by straight approval or by discussing it with the proponent and agreeing on some modifications. **For more information:** **http://www.unife.it/studenti/immatricolazioni-e-iscrizioni/procedure-di-immatricolazione-e-iscrizione-ai-corsi-di-studio-unife**
Foreign Degrees	The CCS will assess if foreign degrees (B. Sc. or equivalent) qualify the holder for admission to the LM. An application must be made, and exam transcripts must be attached. For any information of administrative nature please contact the "**Ufficio Mobilità internazionale e studenti stranieri**" (Office for foreign students and international mobility)– Via Savonarola, 9 – e-mail: **mob_int@unife.it**
Acknowledgment of language certificates and informatics skills certificates	Procedures to assess and acknowledge language certificates and informatics skill certificates are decided by the CCS and made available in the following web site: **http://www.unife.it/scienze/lm.physics/organisation-of-teaching-activities**
Acknowledgment of exams	Applications for the acknowledgment of exams omus be made to the Secretariat (Via Savonarola, 9 -11, 44121 Ferrara), that will forward them to the CCS. See also: **http://www.unife.it/studenti/offerta-formativa/segreterie-studenti**
Transfer of students from other Universities	The CCS will examine the previous University career of students from another laurea courses at Ferrara University, or transfering from another Italian or EU University. The Ccs will determine the further study plan if possible at all, and decide about acknowledgment of already achieved credits after having established the equivalence or affinity of the courses.. The requested level in Physics for being accepted in the School is of course not modified by this procedure of course recognition. For each mandatory subject the obtained credits are recognized within the limit of the credits achieved with the equivalent course at Ferrara. The extra credits are recognized, on request, for optional courses and free choice activities**.** **For more information:** **http://www.unife.it/studenti/immatricolazioni-e-iscrizioni/carriera-universitaria**
Additional information	For all information on the final exam and on the preparaton of the thesis, see: **http://www.unife.it/scienze/lm.physics/information-about-graduation** Students wanting to continue their studies in physics may consider applying for the Doctoral School in Physics: **http://iuss.unife.it/ateneo/iuss/corsi-di-dottorato/sci_tec/fisica/fisica** A list of master courses is also available at: **http://www.unife.it/formazione-postlaurea** Information on after-degree internships is available at: **http://www.unife.it/ateneo/jobcentre/tpl-tirocini-post-laurea**
***Double Degree with Universitè Paris-Sud**	Starting from the academic year 2013-14 a double degree programme with **Universitè Paris-Sud** has been started. Students enrolled in the second year of the Master's Degree in Physics may apply to join this programme. All informations are available in the following web sites: • **http://web.fe.infn.it/dmaster/** • **http://www.unife.it/mobilita-internazionale/offerta-formativa-internazionale-unife-2/lauree-a-doppio-titolo-double-degrees**