



# UNIVERSITÀ DEGLI STUDI DI ROMA “Tor Vergata”

## FACULTY OF ENGINEERING SECOND LEVEL MASTER COURSE IN PHOTOVOLTAIC ENGINEERING

**Academic Year 2011/2012**

The Faculty of Engineering announces the Second Level Master Course in Photovoltaic Engineering for the 2011/2012 Academic Year.

### **AIMS**

Master Course has an international nature and it is addressed to both Italian and foreigner students. In case of foreign students' enrolment, the Course may be held in English language.

The proposed plan of study is aimed both to the training of recent university graduates in technical scientific subjects (a Second Cycle Degree – Laurea Specialistica or Magistrale; an Italian undergraduate degree/ a 4 - year bachelor degree or other degree deemed equivalent by the Faculty Council this Master Course refers to) and to the updating of knowledge and skills of professional already operating in private business and public administrations.

Master Course aims to training professionals with the following skills in the photovoltaic field, both traditional and innovative:

- Analysis, study and design of photovoltaic systems
- Technological support in companies working in this sector
- Private and public research
- Management and maintenance of systems
- Interaction with managerial sectors working in the area of innovation.

The subjects proposed belongs to different scientific and technical areas (physics, chemical, engineering, economics, etc..) but each of them is fundamental and concurs to the training of the professional character object of this Master Course. A full professional training will be given in the theoretical and practical aspects, starting from photovoltaic technologies, carrying on with topics related to the geopolitical strategy concerning the photovoltaic, to economic aspects and project financing. Our target is to create a professional able to move in the new energy scenes to exploit all the new emerging opportunities associated to the green finance world.

The photovoltaic technology is the most supported by funding based on working account. With regard to this an optional section will be dedicated to the Italian Conto Energia.

A particular attention will be dedicated to training at laboratories where theoretical competences will be checked through suitable practical experiences.

### **ARTICULATION**

Partakers at the Master Course will follow their classes in a modern academic world, a place open to receive the most significant boosts for achieving the fixed purposes, in an atmosphere of open competitiveness with the surrounding world.

Therefore classes, besides giving the technical bases of the photovoltaic, will keep a close relation with the evolution and external world events and will be promptly updated, if it deems necessary, in order to constantly combine research with industrial world of that sector.

Master Course lasts one, two or three academic years depending on the individual student's plan of study.

Didactic plan provides 60 credits, equal to 1500 hours, indicatively distributed in:

400 face-to-face hours;

350 hours of stage and operational work in laboratory supported by teachers and tutors;

750 hours of individual study.

Operational work hours include stages in companies. Students will have to carry out 320 hours of stage in 100 days. Days and hours will be scheduled according to the companies' availability.

Classes will be held in the afternoons to favour worker students' attendance, as well.

The 400 face-to-face hours are organized as follows:

COURSE	ITALIAN UNIVERSITY TRAINING CREDIT (CFU)	FACE-TO-FACE HOURS
SOURCES OF ENERGY	2	20
GEOPOLITICS AND STRATEGIES FOR PHOTOVOLTAICS	3	30
PHOTOVOLTAIC PHYSICS	3	30
CHEMICAL APPLIED TO PHOTOVOLTAICS	3	30
ENERGY NETWORKS	2	20
ELECTRONICS AND OPTOELECTRONICS FOR PHOTOVOLTAICS	2	20
PHOTOVOLTAIC CONVERSION SYSTEMS	2	20
CONVENTIONAL PHOTOVOLTAIC TECHNOLOGIES	3	30
INNOVATIVE PHOTOVOLTAIC TECHNOLOGIES	3	30
DESIGN OF SMALL PHOTOVOLTAIC SYSTEMS	3	30
DESIGN OF INDUSTRIAL PHOTOVOLTAIC SYSTEMS	3	30
PHOTOVOLTAICS FOR EMERGENCY	2	20
MEASUREMENT SYSTEMS, CHECKING AND CERTIFICATION	3	30
BALANCE OF PLANT	2	20
PHOTOVOLTAIC ECONOMICS AND PROJECT FINANCING	2	20
ARCHITECTURAL INTEGRATION AND PHOTOVOLTAIC PLANT DESIGN	2	20
FACE-TO-FACE HOURS TOTAL	40	400
STAGE AND OPERATIONAL WORK IN LABORATORY UNDER THE SUPERVISION OF TEACHERS AND TUTORS	20	350
TOTALE	60	750

Training activities will be carried out at the University of Roma Tor Vergata, at the Organic Solar Pole of Lazio - University of Roma "Tor Vergata" (CHOSE).

Study visits will be organized in already existing or in progress facilities as well as in photovoltaic cells and modules factories. These structures could be ideal hosting places where Master Course attendants will carry out their stage activities.

As regards practical exercises, they will be carried out in various laboratories, as:

Organic Solar Pole of Lazio Laboratory (CHOSE)- University of Roma "Tor Vergata";

Environmental Technical Physics Laboratory - University of Roma "Tor Vergata";

Quantum Electronics and Plasmas Laboratory - University of Roma "Tor Vergata".

## ENROLMENT REQUIREMENTS

Applicants for this Master Course must have a Second Cycle Degree – Laurea Specialistica (Italian Ministerial Decree n° 509 dated November 3rd, 1999) or Laurea Magistrale (Italian Ministerial Decree n° 270 dated October 22th, 2004); an Italian undergraduate degree (a 4 - year bachelor degree) or other degree deemed equivalent by the Faculty Council this Master Course refers to.

This Master Course is not strictly addressed to Engineering graduates.

Enrolment of Foreign European or Non-European Community students, legally resident in Italy holding a regular residence permit for employment or study purposes, is admitted.

Enrolment of foreign non-European Community students resident abroad is governed by current regulations.

In order to be admitted to the University Master Course, the evaluation of titles achieved in a foreign country, in European Union countries and Non-EU countries, and their equivalent is established by the Faculty Council on the basis of the proposal made by the Master Council that may eventually indicate the titles required in the announcement.

Officially certified training and specialization activities (including teaching activities within Courses of Study), performed after achieving the study degree required by this call for applications, if coherent with the Master course features, can be recognized by the Master Course Council.

Credits useful to the Master Course completion will be assigned to such activities, reducing the formative charge of 20 credits at most.

Master Course applies selective entry so that a maximum number of 25 students can be enrolled, the minimum number of students is 10.

The enrolment in the Master Course is incompatible with the concurrent enrolment in any other University courses.

## **ENROLMENT FEES**

Enrolment is subordinated to the payment of:

1. total amount of € 4.014,62 for those who intend to complete the course in only one year; divided into two payments:  
€ 2.014,62 to be paid by January 25<sup>th</sup>, 2012 and € 2.000,00 by April 30<sup>th</sup>, 2012;
2. total amount of € 4.500,00 for those who intend to complete the course in two years, divided into two payments:  
€ 4.014,62 in the 1<sup>st</sup> year to be paid as above written;  
€ 514,62 in the 2<sup>nd</sup> year to be paid by January 30<sup>th</sup>, 2013;
3. total amount of € 5.000,00 for those who intend to complete the course in three years:  
€ 4.014,62 in the 1<sup>st</sup> year to be paid as above written;  
€ 514,62 in the 2<sup>nd</sup> year to be paid by January 30<sup>th</sup>, 2013;  
€ 514,62 in the 3<sup>rd</sup> year to be paid by January 30<sup>th</sup>, 2014.

Enrolment fee includes the participation in every foreseen activities (theoretical and practical), didactic materials and accident insurance.

Within the first yearly fee, a virtual revenue stamp of € 14,62 must be paid.

The English translation of the announcement and application procedures are available on the website of the Master.

For students with a civil disability of 66% or more, proved by proper documentation, exemptions from Master Course enrolment fee and a reduced tuition fee of €100,00 for the attendance of the whole Master Course are foreseen.

The entitled students have to submit to the secretariat office all the documentation which proves civil disability, before enrolment.

## **GRANTS**

Master Council, reasonably and in particular cases, can decide to fund study grants for covering the enrolment fee amount, totally or partially.

These grants will depend on a ranking drawn up according to student's curriculum evaluation and an interview with the candidates.

## **APPLICATION FORM**

In order to enter the competition, applicants have to send **by e-mail** to [info@masterpv.org](mailto:info@masterpv.org) the following documentation by **December 30<sup>th</sup>, 2011**:

- Application Form (to be printed and filled) available on the University website at <http://www.uniroma2.it> by selecting: Formazione Post-Laurea – “Master di II livello” – “Ingegneria del Fotovoltaico” and download the proper form available in the section “allegati” (attachments);
- Curriculum Vitae;
- Degree certificate on plain paper or self-certification within exam marks and final degree grade.

Admission to the Master is conditional upon a positive evaluation assessment of the student’s curriculum by the Master Course Council.

If maximum number of 25 is exceeded, admitted students will be chosen according to a ranking drawn up by the Master Course Council.

**Admitted students list** will be published on the University web site (<http://www.uniroma2.it>) **by January 11, 2012.**

If an admitted student will not enroll, the next one in the ranking will be admitted to the Master Course.

## **ENROLMENT**

The admitted students have to enroll **by January 25, 2012** following this procedure:

1. Visit the University website <http://delphi.uniroma2.it> and select AREA STUDENTI and then A) CORSI POST-LAUREAM > 1) MASTER/CORSI DI PERFEZIONAMENTO > 2) IMMATRICOLAZIONI > “FACOLTÀ DI INGEGNERIA” > HO SUPERATO LA PROVA DI AMMISSIONE/SOSTENUTO IL TEST DI VALUTAZIONE E DESIDERO IMMATRICOLARMI, after filling the text boxes with your personal data, select “Master in Ingegneria del Fotovoltaico” (Course Code **PIF**).
2. Fill the registration form providing all the data required.  
After completing the procedure, a code (CTRL) will be displayed. You absolutely have to make a note of it before printing the registration and payment forms.  
This code will eventually help you to solve problems that may occur (reprint and registration delete functions).
3. Print the registration form and the first fee payment form of € 2.014,62 (inclusive of a virtual revenue stamp of € 14,62).  
Payment must be made at any national Unicredit Agency. **You have to use just only the payment form created during the online enrolment procedure. Any amount paid using other ways of payment should not apply for this enrolment** (with the exclusive exception of companies that will pay for their employees’ enrolment. Employees have to follow the enrolment on-line procedure by the indicated due date).
4. After payment, visit again <http://delphi.uniroma2.it> web page, repeat the above-mentioned procedure, select “Convalida di pagamento”, and insert CTRL and AUTH codes (these codes are provided by the Bank Agency).  
**THIS ADDITIONAL PROCEDURE IS ABSOLUTELY NECESSARY** in order to validate you enrolment;
5. Deliver or send by registered mail with advice of delivery, by and no later than January 25, 2012, to Segreteria Corsi di Perfezionamento e Master Universitari – Via Orazio Raimondo 18 – 00173 ROMA, all the documents (printed and filled Registration Form, bank payment receipt, copy of a valid identity card, enrolment note with the inscription “da consegnare in segreteria”).

**The secretariat office “Master and Corsi di Perfezionamento” is open on Monday, Wednesday and Friday from 9 a.m. to 12 a.m. It is also open on Wednesday evenings from 2 p.m. to 4 p.m.**

**email: [segreteriamaster@uniroma2.it](mailto:segreteriamaster@uniroma2.it) fax + 39 06/7259.2223.**

Next fee payment must be made **by April 30, 2012**, following the same procedure of first fee payment: visit the University website, select AREA STUDENTI and then A) CORSI POST-LAUREAM > 1) MASTER/CORSI DI PERFEZIONAMENTO > 3) ADEMPIMENTI E SERVIZI.

Insert the University Identification Number and the password provided during the enrolment procedure.

After each payment it is necessary to proceed with the online validation process.

### **NEXT YEARS REGISTRATION**

Students who intend to complete the course in two or three years can enter the next years by the above mentioned deadlines by connecting to the University website <http://delphi.uniroma2.it> and select AREA STUDENTI and then in order:

A) corsi post-lauream > 1) master/corsi di perfezionamento > 4) iscrizioni ad anni successivi al primo. Insert the University Identification Number and the password provided during the enrolment procedure. Fill the registration form and make the payment of € 514,62 (inclusive of the revenue stamp of € 14,62).

Deliver or send by registered mail with advice of delivery, **by and no later than the indicated due date**, to Segreteria Corsi di Perfezionamento e Master Universitari – Via Orazio Raimondo 18 – 00173 ROMA, the documents (printed and signed Registration Form and bank payment receipt).

The second fee for years different from the first has to be paid by the proper due date as indicated in this announcement.

**After each payment it is necessary to proceed with the online validation process, following the above mentioned procedure.**

### **PRE-ENROLMENT AND ENROLMENT FOR FOREIGN CITIZENS**

Foreign study degree must be attached to the Application Form within the Italian official translation, legalization and declaration of value released by the Italian Diplomatic Representation in the country where foreign students achieved the study degree.

Non-European Community citizens resident abroad have to submit the pre-enrolment form through the competent Italian Diplomatic Representations who, in turn, shall send it to the University within foreign study degree, Italian official translation, legalization and declaration of value attached.

Non-European Community citizens resident abroad have to provide during the enrolment procedure to the secretariat office “Master and Corsi di Perfezionamento”, the above required documents and regular residence permit, valid for at least one year, issued by police headquarters, for one of the purposes listed in art. 39, comma 5 of D.L.vo n. 286 of July 25, 1998 (i.e. selfemployment, salaried job, family reasons, political asylum, human rights asylum or religious reasons) and residence certificate on plain paper.

**Irregular Application Forms will not be accepted.**

### **CLASSES BEGINNING**

Classes beginning is foreseen for the end of January and early February, 2012.

### **ATTENDANCE AND FINAL DEGREE GRADE**

Attendance is compulsory for at least 85% of classes.

Getting Master Course final degree depends on the attendance check and on passing evaluation tests and final exam.

At the end of the Master Course, an University Second Level Master Degree in “Photovoltaic Engineering” will be issued to those who regularly attended classes and passed evaluation tests and final exam.

A written and/or oral exam is foreseen at the end of each course and a final exam consisting in a public dissertation of a technical thesis to which the candidate has worked during the operational activities.

The final exam must be held by the last session scheduled for the second academic year following the last enrolment year. Beyond this term the students will not graduate.

After getting Master Degree, students can ask for the degree parchment by submitting a request within a payment receipt of € 130,00 inclusive of virtual revenue stamp fee (unless any change established by the University Administrative Board).

Payment form is available on the University website <http://www.uniroma2.it> by selecting [L'Amministrazione](#) -> [Ufficio Progettazione Grafica e Stampa Pergamene](#) then printing the payment form in the section “allegati al contenuto”.

Degree parchment request, payment receipt and copy of the identity card must be delivered, during the opening days, to the secretariat office “Master e e Corsi di Perfezionamento” or sent by registered mail with advice of delivery to the Master e Corsi di Perfezionamento secretariat office -- Via Orazio Raimondo 18 – 00173 ROMA.

## **INFORMATION**

For further information please contact:

- **Master Didactic Secretariat – dr. Carla Di Chiara - +39 06 72597567**
- “Master e Corsi di Perfezionamento” Secretariat:  
[http://web.uniroma2.it/modules.php?name=Content&section\\_parent=4133](http://web.uniroma2.it/modules.php?name=Content&section_parent=4133)  
e-mail [segreteriaamaster@uniroma2.it](mailto:segreteriaamaster@uniroma2.it) fax 06/7259.2223

Opening days: Monday, Wednesday and Friday from 9 a.m. to 12 a.m. It is also open on Wednesday evenings from 2 p.m. to 4 p.m.

Address: Via Orazio Raimondo 18 – 00173 ROMA

- “CHIAMA TOR VERGATA” Service tel. +39 06 7231941 [chiamatorvergata@uniroma2.it](mailto:chiamatorvergata@uniroma2.it)
- URP tel. e fax 06/72592542 - 2272 [relazioni.pubblico@uniroma2.it](mailto:relazioni.pubblico@uniroma2.it)

Roma, 07/10/2011

Il Direttore amministrativo  
Dott. Ernesto Nicolai

Il Rettore  
Prof. Renato Lauro