

EMAP / ERASMUS MUNDUS ACTIVE PARTICIPATION
Prague / Czech Republic / 4 - 7 February 2010

SUSTAINABILITY

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PATRAS, GREECE

OBJECTIVES OF THE ERASMUS-MUNDUS PROGRAMS

- Decisions No 2317/2003/EC and No 1298/2008/EC of the European parliament and of the Council for **Erasmus Mundus (2004-2009) and (2009-2013)**

for:

- The enhancement of quality in higher education
- Helping to improve and enhance the career prospects of students
- The promotion of intercultural understanding through cooperation with third countries and their development in the field of higher education

- **To help attract the best students from third countries due to the quality of the studies on offer, the quality of the reception arrangements and a scholarship scheme that can compete with any in the world.**

PART E: Project implementation / Award criteria

EMMC

A.1) Academic Quality	30%
A.2) Course integration	25%
A.3) Course Management, visibility and sustainability measures	20%
A.4) Students' facilities and follow-up	15%
A.5) Quality Assurance and evaluation	10%

EMJD

B.1) Academic and research quality	25%
B.2) Partnership experience and composition	25%
B.3) European integration and functioning of the programme	20%
B.4) Provisions for EMJD candidates and fellowship holders	15%
B.5) Programme Management and Quality Assurance	15%

PROPOSAL SELECTION CRITERIA- EMMC

- **A.3 Course Management, visibility and **sustainability** measures (20% of the max. score)**
 - **A.3.1 Describe the organisation of the cooperation mechanisms within the consortium.**
 - **A.3.2 Provide information on the partner institutions' contribution to the EMMC and describe the way the EMMC will be managed from a financial point of view.**
 - **A.3.3 Describe the consortium development and sustainability plan designed to ensure the proper implementation and continuity of the EMMC beyond the period of Community funding.**
 - **A.3.4 Describe the course promotion measures taken by the consortium to increase the course's (and the EM programme's) visibility and attractiveness.**

PROPOSAL SELECTION CRITERIA- EMJD

- **B.5 Programme Management and Quality Assurance (15% of the max. score)**
 - **B.5.1** Describe the quality of the organisational arrangements and cooperation mechanisms within the consortium and the specific role played by each of its members
 - **B.5.2** Describe how the consortium's development and sustainability plan is designed in order to ensure the proper implementation and continuity of the joint programme beyond Community funding
 - **B.5.3** Describe to what extent have complementary funding possibilities been explored and/or secured?
 - **B.5.4** Describe the nature of the internal evaluation (by the institutions themselves? through candidates/scholars feedback systems? etc.) and external quality assessment (by e.g. national, international or professional bodies) envisaged

MEASURES FOR SUSTAINABILITY

- **Build a reputation in the duration of the program**
 - **Quality of the faculty**
 - **Quality of the academic program offered**
 - **Quality of research**
 - **Visibility**
 - **Offer the possibility for doctoral studies**
- **Increase the number of scholarships by creating a fund from the tuition paid**
- **Try to secure external scholarships from State and private organizations with an interest for the program**

- **Lower tuition fees and give many tuition scholarships to good students**
- **Provide incentives and strongly encourage faculty members to submit proposals and raise research funding.**
- **Minimize the load on the participating faculty by building the EM program around courses that are already offered as part of an existing graduate program. This requires that the course of the existing program is offered in English.**

FROM THE 2009 PROPOSAL FOR THE MEEES PROGRAM

- **Provision for consortium scholarships through the creation of a special scholarship fund**
- **Promised action to obtain other sources of funding from national and international mobility grant programmes.**
- **Listed State and Private enterprises committed with a letter of intent to:**
 - **host students from the programme for their Master's Project (for 4-5 months)**
 - **sponsor students to work on particular research topics within the institutions**
 - **offer scholarships (mainly for an EMJD program)**
 - **be associated partners of the program, thus further strengthening their ties with the program**
 - **join the international external advisory board**

ISSUES OTHER THAN SUSTAINABILITY

or

(Additional information for a successful program)

**MEEES – Erasmus Mundus
GRADUATE PROGRAM OF STUDIES**

Leading to the degrees:

**MASTER OF SCIENCE in
Earthquake Engineering and Engineering
Seismology**

Goal:

To provide high level graduate studies leading to the following European degrees:

1st Phase (2005-2010)

Master of Science in Earthquake Engineering (12 Months)

Master of Science in Engineering Seismology (12 Months)

**Master of Science in Earthquake Engineering
and Engineering Seismology (18 Months)**

2nd Phase (2010-2014)

Same Degrees, duration 18 months for all

COOPERATING UNIVERSITIES

- 1. Istituto Universitario di Studi Superiori di Pavia & Università degli Studi di Pavia**
- 2. Université Joseph Fourier, Grenoble**
- 3. University of Patras**
- 4. Middle East Technical University (2ND phase participant)**
- 5. Imperial College (Associate Member, 1st phase)**

EU SCHOLARSHIPS

- | | <u>Application
Deadlines</u> |
|--|----------------------------------|
| 1. Type A : 38.000 € (7 total)
For 3 rd country students | (31/12/09) |
| 2. Type B :15.000 € (5 total)
For European nationals | (30/3/10) |

CONSORTIUM SCHOLARSHIPS

- | | |
|--|-----------|
| 1. Type C :15.000 € (5 total)
For students of any nationality | (30/3/10) |
|--|-----------|

EU SCHOLARSHIPS

- 1. Type a : 38.000 € (7 total)
For 3rd country students**
- 2. Type b :15.000 € (5 total)
For European nationals**

CONSORTIUM SCHOLARSHIPS

- 1. Type c :15.000 € (5 total)
For students of any nationality**

TUITION FEES

1. **12.000 €** (total) for 3rd country students
2. **6.000 €** (total) for European nationals

**Till now very few students (2 or 3)
attended without scholarships and
paying full tuition**

ACADEMIC REQUIREMENTS

Requirements	MSc Degree in Earthquake Engineering & Engineering Seismology
Number of institutions in which the student must study	2
Semesters during which the student may follow taught modules	2
Semesters during which the student may prepare the Master's Project	1
Number of ECTS credits that must be attained for Master's Project	30
Min. number of ECTS credits that must be attained in each institution	30
Min. number of ECTS credits that must be obtained in Earthquake Engineering related modules/Project	60
Min. number of ECTS credits that must be obtained in Engineering Seismology related modules/Project	-
Total number of ECTS credits required	90



The Istituto Universitario di Studi Superiori di Pavia, the Università degli Studi di Pavia,
the Université Grenoble 1, the University of Patras and the Middle East Technical University

Award

NAME SURNAME

Born in Town, Country on the DD-MM-YYYY

IN RECOGNITION OF HIS/HER PROFICIENCY IN ALL THE STUDIES AND EXERCISES AND THE SATISFACTORY COMPLETION OF ALL THE
REQUIREMENTS PRESCRIBED BY SAID UNIVERSITIES FOR SUCH DEGREE, GIVEN THIS DAY, AS INDICATED BELOW

the Master of Science Degree in

EARTHQUAKE ENGINEERING & ENGINEERING SEISMOLOGY [to be adapted accordingly]

Academic year YYYY-YYYY

Date

The Director of the Istituto Universitario di Studi Superiori di Pavia
Prof. Roberto Schmid

The Rector of the Università degli Studi di Pavia
Prof. Angiolino Stella

The President of the Université Grenoble 1
Prof. Farid Ouabdesselam

The Rector of the University of Patras
Prof. Stavros A Koubias

The Rector of the Middle East Technical University
Name



Erasmus Mundus

Student Transcript

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Erasmus Mundus Masters in Earthquake Engineering and Engineering Seismology (MEEES)

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

DIPLOMA SUPPLEMENT

1. HOLDER OF THE QUALIFICATION

1.1 Family Name(s):

1.2 First Name(s):

1.3 Date, Place, Country of Birth:

2. QUALIFICATION

2.1 Name of Qualification (fill in as appropriate)

Master Degree in Earthquake Engineering and Engineering Seismology

2.2 Main Field(s) of Study for the Qualification (fill in as appropriate)

Earthquake Engineering and Engineering Seismology

2.3 Institutions Awarding the Qualification (in original language):

Istituto Universitario di Studi Superiori di Pavia
 Università degli Studi di Pavia
 Université Grenoble 1
 University of Patras
 Middle East Technical University

[It is noted that the first two institutions, which are independent, jointly organise and run the postgraduate earthquake engineering programme in Pavia, through the Centre for Post-Graduate Training and Research in Earthquake Engineering and Engineering Seismology (ROSE School).]

State (Type/Control)

Universities / State Institutions

2.4 Institutions Administering Studies (in original language):

ROSE School, Pavia
 Université Joseph Fourier, Grenoble
 University of Patras
 Middle East Technical University

State (Type/Control)

Universities / State Institutions

2.5 Language(s) of Instruction/Examination

English

3. LEVEL OF THE QUALIFICATION

3.1 Level of qualification

Postgraduate degree

3.2 Official Length of Programme (fill in as appropriate)

MSc Degree in Earthquake Engineering and Engineering Seismology: 18 months, 90 ECTS credits

3.3 Access Requirements

The minimum requirement in order to apply for the programme is a University Degree, or past professional experience, in Civil Engineering.

4. CONTENTS AND RESULTS GAINED

4.1 Mode of Study

Full time

Mobility in at least two universities of the consortium awarding the qualification

4.2 Programme Requirements (replace as appropriate)

To obtain the MSc degree, students must have completed the following requirements:

Requirements	MSc Degree in Earthquake Engineering & Engineering Seismology
Number of institutions in which the student must study	2
Semesters during which the student may follow taught modules	2
Semesters during which the student may prepare the Master's Project	1
Number of ECTS credits that must be attained for Master's Project	30
Min. number of ECTS credits that must be attained in each institution	30
Min. number of ECTS credits that must be obtained in Earthquake Engineering related modules/Project	60
Min. number of ECTS credits that must be obtained in Engineering Seismology related modules/Project	-
Total number of ECTS credits required	90

Student Transcript

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4.3 Programme Details

Mobility path, list of courses and grades and topic of the Master's Project is provided below.

1st Semester: *(fill in as appropriate)*

Course Title	Local Grade	ECTS Credits (Grade)

2nd Semester: *(fill in as appropriate)*

Course Title	Local Grade	ECTS Credits (Grade)

3rd Semester: *(fill in as appropriate)*

Course Title	Local Grade	ECTS Credits (Grade)

Master's Project: *(fill in as appropriate)*

Title	Industry/Research	ECTS Credits

4.4 Grading Scheme

The ECTS grading scheme is used (see Annex). Students also receive their grades according to the local grading scheme.

4.5 Overall Classification of the Qualification

N/A

5. FUNCTION OF THE QUALIFICATION

5.1 Access to Further Study

Qualifies to apply for admission for a doctoral programme.

5.2 Professional Status

N/A

6. ADDITIONAL INFORMATION

6.1 Additional Information

N/A

6.2 Further Information Sources

Website of the MEEES Master course: www.meees.org

7. CERTIFICATION OF THE SUPPLEMENT

7.1. Date:

7.2 Signature:

7.3. Capacity:

7.4: Official Stamp or Seal

8. INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEMS

See overleaf

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THE ITALIAN UNIVERSITY SYSTEM

(DM 509/99 and DM 270/2004)

Since 1999, Italian university studies have been reformed so as to meet the objectives of the "Bologna process". The university system is now organised in 3 cycles: the *Laurea*, the 1st cycle academic degree, grants access to the 2nd cycle, and the *Laurea specialistica/magistrale*, the main degree of the 2nd cycle, gives access to 3rd cycle courses awarding the *Dottorato di ricerca*. In addition to the three sequential degrees mentioned above, the system offers other programmes with their respective degrees.

First cycle. First cycle studies consist exclusively in *Corsi di Laurea*, aimed at guaranteeing students an adequate command of general scientific methods and contents as well as specific professional skills. The general access requirement is the school leaving qualification awarded on completion of 13 years of global schooling and after the relevant State examinations; also comparable foreign qualifications may be accepted. Admission to individual degree courses may be subject to specific course requirements. *Laurea* courses last 3 years. The *Laurea* (1st degree) is awarded to students who have earned 180 credits; the completion of a training period and the defence of a thesis may also be required. The *Laurea* grants access to competitions for the civil service, to regulated and non-regulated professions, and to 2nd cycle courses.

Second cycle. Second cycle studies include the following typologies:

A) *Corsi di Laurea specialistica/Corsi di Laurea magistrale*; they are aimed at providing students with an advanced level of education for the exercise of a highly qualified activity in specific areas. Access is usually by a *Laurea* or a comparable foreign degree; admission is subject to specific course requirements determined by individual universities; workload: 120 credits; length: 2 years. The awarding of the degree, *Laurea specialistica/magistrale* (2nd cycle degree of the "Bologna process") is conditional on the defence of a thesis. The change of the name from *Laurea specialistica* into *Laurea magistrale* was decided in 2004. A limited number of 2nd cycle programmes (dentistry, human medicine, pharmacy, veterinary medicine, architecture, law), are defined *Corsi di Laurea specialistica/magistrale a ciclo unico* (one-block LS/LM courses); access is by the school leaving diploma or a comparable foreign qualification; admission is subject to selective entrance exams; each degree course is organised in just one-block of 5 years and 300 credits (only human medicine requires 6 years and 360 credits). All *Lauree specialistiche/magistrali* grant access to competitions for the civil service, to regulated and non-regulated professions, research doctorate programmes and all the other degree courses of the 3rd cycle.

B) *Corsi di Master universitario di primo livello*. They consist in advanced scientific courses or higher continuing education studies open to the holders of a *Laurea* or a comparable foreign degree; admission may be subject to additional conditions. Length:

minimum 1 year; workload: 60 credits at least. The *Master universitario di primo livello* does not give access to the 3rd cycle.

Third cycle. Third cycle studies include the following typologies:

A) *Corsi di Dottorato di Ricerca* aim at training students for very advanced scientific research; they adopt innovative teaching methodologies, updated technologies, training periods abroad and supervised activities in specialized research centres. Admission requires a *Laurea specialistica/ magistrale* (or a comparable foreign degree) and to pass a specific competition; studies last a minimum of 3 years; the doctoral student must work out an original dissertation to be defended in the final examination.

B) *Corsi di specializzazione* are devised to provide students with knowledge and abilities as requested in the practice of highly qualified professions; they mainly concern medical, clinical and surgical specialties. Admission requires a *Laurea specialistica/magistrale* (or a comparable foreign degree) and the passing of a competitive examination; course length varies in relation to subject fields. The final degree, *Diploma di specializzazione*, gives the right to the title as *Specialista*.

C) *Corsi di Master universitario di secondo livello* consist in advanced scientific courses or higher continuing education studies, open to the holders of an LS or a comparable foreign degree. Length: minimum 1 year; workload: 60 credits at least.

Credits: degree courses are usually structured in credits. A university credit generally corresponds to 25 hours of global work per student, time for personal study included. The average workload of a full time student is conventionally fixed at 60 credits per year.

Classes of degree courses: all degree courses sharing educational objectives and teaching-learning activities are organised in groups called *classi*. The content of individual degree courses is autonomously determined by universities; however, when establishing a degree course, individual institutions have to adopt some general requirements fixed at national level. Degrees belonging to the same class have the same legal validity.

Academic titles: the *Laurea* confers the title "*Dottore*", the *Laurea specialistica/magistrale* that of "*Dottore magistrale*", the *Dottorato di ricerca* that of "*Dottore di ricerca*".

Joint degrees: Italian universities may establish degree courses in cooperation with foreign partner universities; on completion of integrated curricula joint or double/multiple degrees are awarded.

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ANNEX: THE ECTS CREDIT SYSTEM

ECTS (European Credit Transfer and Accumulation System) is based on the principle that 60 credits measure the workload of a full-time student during one academic year. The student workload of a full-time study programme in Europe amounts in most cases to around 1500-1800 hours per year and in those cases one credit stands for around 25 to 30 working hours.

Credits in ECTS can only be obtained after successful completion of the work required and appropriate assessment of the learning outcomes achieved. Learning outcomes are sets of competences, expressing what the student will know, understand or be able to do after completion of a process of learning, long or short.

Student workload in ECTS consists of the time required to complete all planned learning activities such as attending lectures, seminars, independent and private study, preparation of projects and examinations.

Credits are allocated to all educational components of a study programme (such as modules, courses, placements, dissertation work, etc.) and reflect the quantity of work each component requires to achieve its specific objectives or learning outcomes in relation to the total quantity of work necessary to complete a full year of study successfully.

The performance of the student is documented by a local/national grade. The ECTS grading scale ranks the students on a statistical basis. Therefore, statistical data on student performance is a prerequisite for applying the ECTS grading system. Grades are assigned among students with a pass grade as follows:

A best 10%
B next 25%
C next 30%
D next 25%
E next 10%

A distinction is made between the grades FX and F that are used for unsuccessful students. FX means: "fail – some more work required to pass" and F means: "fail – considerable further work required".

PROGRAM ADMINISTRATION

- Coordinated by the Consortium Coordinator
- Governed by a **Governing Board** consisting of one or two faculty members, representing each partner.

(The Board meets at least biannually - January and May- to review applications, select students, discuss matters, etc.)

- **External Advisory Board** consisting of 6 external advisors selected to advise on the program.

(Meets annually - in May- with the Governing Board)

FINANCIAL MATTERS

1. **FIXED EC CONTRIBUTION: 30.000€/YEAR**
(Split equally between the 4 partners)
2. **EC pays all of the type a and type b scholarships**

3. **Tuition fees subtracted from the Scholarships:**

$$\begin{aligned} &7 \times 8000 + 5 \times 4000 + 5 \times (2000 \text{ or } 4000) = \\ &= \mathbf{86.000 - 96.000 \text{ € /YEAR}} \end{aligned}$$

4. Distribution of income from tuition

- **20%** for coordinator (management costs)
- **15%** equally split between partners (fixed running costs)
- **25%** for the type c, consortium scholarships
- **40%** divided among the 4 partners in proportion to the total number of credit units to be awarded to the students attending the program in the year

FACULTY AT THE UNIVERSITY OF PATRAS

S. A. Anagnostopoulos

M.N. Fardis

A. Papageorgiou

A. Triantafyllou

Sc.D. , MIT

D. E. Beskos,

Ph.D., Cornell University

D.L. Karabalis,

Ph.D., University of Minnesota

M.N. Makris

Ph.D., S.U.N.Y. - Buffalo

G. Mylonakis

E. Bousias

Ph.D. Univ. of Patras

M.S. Case Inst. Of Technology,

FACULTY MEMBER

COURSE

S. A. Anagnostopoulos	(a) Structural Dynamics and Earthquake Engineering (b) Earthquake Engineering and Earthquake Resistant Structures
D. E. Beskos	Seismic Design of Steel Structures
M.N. Fardis	Seismic Design of Reinforced Concrete Buildings
M.N. Makris	Seismic Protection systems for Structures
A. Papageorgiou	(a) Engineering Seismology (b) Stochastic Dynamics of Structures
D.L. Karabalis	(a) Structural Dynamics and Earthquake Engineering (b) Soil Dynamics and Seismic Design of Foundations
T. Triantafyllou	Advanced Materials and Seismic Retrofit Technologies
G. Mylonakis	(a) Static and Dynamic Soil-Structure Interaction (b) Soil Dynamics and Seismic Design of Foundations
E. Bousias	Experimental Methods in Earthquake Engineering

LOCAL MANAGEMENT OF FUNDS

- 1. Administered through the University Special Research Account**
- 2. Covers running expenses (assistant's salary, purchase of copier, PC, consumables, etc)**
- 3. Remaining is distributed among participating faculty members who can use it for the needs of the program at will.**

The distribution follows the algorithm :

Each full course taught : 1 unit weight

Each thesis supervised : 1/8 unit weight

Program coordinator: 0.5 unit weight/ semester

WORK UNITS PER FACULTY MEMBER IN THE MEEES PROGRAM

PROFESSOR	05 F	06 S	06 F	07 S	07 F	TOTAL UNITS	08 S	08 F	TOTAL # OF THESES*	TOTAL UNITS
1 ANAGNOST.	1.5	0,5	1.0	0,5	1	4,5	0.5	1.0	-	6.0
2 BESKOS	0,5	1	_	1		2,5	1	-	-	3.5
3 KARABALIS	0,5	_	0,5	0,5	0,5	2	0.5	0.5	-	3.0
4 MAKRIS	_	1	_	1		2	1	-	2/0.25	3.25
5 MYLONAKIS	_	_	1	0,5	1	2,5	0.5	1	4/0.5	4.5
6 TRIANTAFUL.	1	_	1	_	1	3	-	1	4/0.5	4.5
7 FARDIS	_	_	1	_	1	2	-	1	2/0.25	3.25
8 PAPAGEORG.	_	2	_	2		4	2	-	4/0.5	6.5
TOTAL	3,5	4,5	4.5	5,5	4.5	22,5	5.5	4.5	16/2.0	34.5

• Thesis supervision corresponds (by agreement) to $1/8 = 0.125$ units of a semester course

STUDENT ENROLLMENT

**For the first phase of the program:
(Sept. 2005- June 2010)**

NUMBER OF STUDENTS AND THEIR NATIONALITY ENROLLED IN THE MEEES ERASMUS/MUNDUS PROGRAM FOR THE PERIOD: SEPT 2005 – JULY 2010

ACADEMIC YEAR	FALL SEMESTER		SPRING SEMESTER	
	NUMBER	NATIONALITY	NUMBER	NATIONALITY
2005 – 2006	4	ECUADOR, GREECE (2) USA	11	PERU, GREECE, COLOMBIA, INDIA, VIETNAM, MEXICO, AUSTRALIA, CHINA, ITALY, HONDURAS, NEPAL
2006 – 2007	11	USA, IRAN, INDIA (2), PAKISTAN, THAILAND, GREECE (2), ITALY (2), COLOMBIA	13	NEPAL, MEXICO, ETHIOPIA, INDIA (2), CHINA, THAILAND, MALAYSIA, GREECE (2), ITALY, TURKEY, CHILE
2007 – 2008	9	IRAN (2), ETHIOPIA, INDIA, MOZAMBIQUE, KOSOVO, GREECE, ITALY, NEPAL	9	COLOMBIA (2), USA, CHINA, ARGENTINA, GREECE (3), TURKEY
2008 – 2009	12	USA (2), CHINA (2), IRAN (2), COSTA RICA (2), CROATIA, GREECE, PORTUGAL, IRELAND	1	INDIA
2009 – 2010	14	USA (2), GREECE (2), ANTIGUA-BARBADOS, FIJI ISLANDS, IRAN, AUSTRALIA, TURKEY (2), ITALY, COSTA RICA, SERBIA	5	ITALY (2), CHINA, PAKISTAN (2)
TOTAL	50		39	

ACCOMMODATION – EXPENSES

UNIVERSITY DORMITORIES

Single Rooms, Private bath: 150 €/mo

Free breakfast

Lunch – Dinner: 1 €/Meal

PRIVATE APARTMENTS

Prices start from 250 €/mo

OTHER BENEFITS

All the benefits of Greek students, like:

- **Free Medical care**
- **Student ID with which they get discounts in public transportation, museums, theatres etc.**

VISAS

- **Given for a 4 month period**
- **Extension in Greece**

OTHER

- **Low tuition fees for Greek language**

THANK YOU FOR YOUR ATTENTION