



Universidade do Minho



Diploma Supplement

This Diploma Supplement follows the model 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.

1 Information identifying the holder of the qualification

- 1.1 Family name(s): 'LLLLLLLLLLLLL
- 1.2 Given name(s): 'LLLLLLLLLLLLL
- 1.3 Date of birth (year/month/day): 'LLLL!LL!LL
- 1.4 Student identification number or code: 'LLLLL
Identity card/Passport number: 'LLLLLL

2 Information identifying the qualification

- 2.1 Name of qualification and title conferred (in original language):
Mestrado Europeu em Reologia Aplicada à Engenharia/ European Masters in Engineering Rheology (EURHEO), Mestre
- 2.2 Main field(s) of study for the qualification:
Materials Engineering, Polymer Engineering, Chemical Engineering, Food Engineering and Mechanical Engineering
- 2.3 Name (in original language) and status of awarding institution:
Universidade do Minho (University)
Public Higher Education Institution, created in 1973 by the Decree-Law 402/73, published in *Diário da República 1ª série, n.º 188*, August 11th.

2.4 Name (in original language) and status of institution (if different from 2.3) administering studies:

Not applicable

2.5 Language(s) of instruction/examination:

English

3 Information on the level of the qualification

3.1 Level of qualification:

University Education - *Mestrado* - Level 5A (ISCED).

3.2 Official length of programme:

2 years/4 semesters/40 weeks of full-time study per year/120 ECTS credits.

3.3 Access requirement(s):

Degree with a minimum of 180 ECTS or equivalent in relevant areas of Engineering, Exact Sciences or Natural Sciences.

4 Information on the contents and results gained

4.1 Mode of study:

Full-time.

4.2 Programme requirements:

The European Masters in Engineering Rheology is a Master recognized by the European Commission with the "Erasmus Mundus" excellence label. The Higher Education Institutions involved in the Master are the University of Minho (Portugal), the Catholic University of Leuven (Belgium), the Catholic University of Louvain (Belgium), the University of Huelva (Spain), the University of Ljubljana (Slovenia) and the University of Calabria (Italy).

The objective of the Master is to offer an advanced education programme on Rheology and its application to numerous engineering fields. The Master combines the diversity of expertise of leading European Universities in the field of Rheology and its study plan was elaborated to provide the students with the necessary skills to understand the relevance of Rheology in Materials Science and Engineering, autonomously and in research group contexts.

The study programme is composed of eight curricular units, the last being the dissertation. The competences gained within this master course are:

- Capacity to develop a professional career centered in a technical, industrial and/or investigative perspective.
- Team work and networking skills in the context of specialization or multidisciplinary
- Ability to apply key elements of Rheology in the resolution of engineering problems, as well as in research and exploration of innovative technical solutions.
- The assimilation of a scientific, critical, ethic and creative attitude, with results presentation and argumentation skills.

Eurheo has the total duration of two academic years and confers 120 ECTS credits. In the first year, each student attends the (PSP) Primary Studies Programme, in each of the five partner institutions, according to their background and application choice. The studies are organized in a way to impart the students with a solid basic knowledge in the different areas of Materials Science and Engineering, in which Rheology is directly relevant and award 60 ECTS credits. The second year includes the (ISP) Integrated Studies



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Programme, in which the students obtained 15 ECTS credits, through the attendance of three (CBM) Common Branch Modules, which are organized at University of Minho. These courses verse in the main areas of application of Rheology, namely Materials Science and Engineering, Instrumental and Experimental Rheology and Theoretical and Computational Rheology. It is followed by another 15 ECTS credits obtain with three (ATM) Advanced Topical Modules that are offered using e-learning techniques. These modules are centered in the in depth study of particular areas of Rheology relevant the student's thesis work. Finally, the master concludes with the 30 ECTS credit Dissertation, focused on scientific or industrial research in a relevant topic for Rheology. The student's mobility in the frame of the EURHEO project is characterized by part of the study programme performed at a minimum of two and a maximum of three consortium universities, which will give the students a double or a multiple degree, awarded by the Higher Education Institutions Involved.

4.3 Programme details (e.g. modules or units studied), and individual grades/marks/credits obtained:

Scientific Areas	Compulsory	Optional
Polymer Science and Engineering	60 ECTS	0 ECTS
Materials Science and Engineering	60 ECTS	

In the academic year 2009/2010, the student performed the 1st year at *KATHOLIEKE UNIVERSITEIT LEUVEN*, Belgium, under the Erasmus Mundus Programme, achieving a total of 61 ECTS credits.

The following course units were carried out within this scope:

Course Unit, Duration, Original Classification

Chemical Process Design: Practical Chemical Engineering Design Problem, -, 11/20
 Chemical Product Design, -, 13/20
 Degradation and Corrosion, -, 10/20
 English for Professional Purposes, -, 17/20
 Hazardous Materials and Safety in the Process Industries, -, 13/20
 Industrial Chemical Processes, -, 14/20
 Industry and Environment, -, 15/20
 Introduction to European Culture, -, 18/20
 Physics and Mechanical Behaviour of Polymers, -, 11/20
 Plastics, Parts 2, -, 16/20
 Polymer Melt Rheology, -, 14/20
 Polymer Processing Techniques, -, 16/20
 Powder Technology, -, 14/20
 Product and Process Design Concepts in Life Science - (Bio)Chemical Industries - PED-ATH, -, 16/20
 Transport Phenomena and Engineering Kinetics, -, 16/20
 Transport Phenomena, Part 2, -, 12/20

The Transcript of Records is enclosed (see Appendix I).

4.4 Grading scheme and, if available, grade distribution guidance:

On a 0 to 20 grading scheme, a minimum grade of 10 in each course unit is necessary to pass. In order to establish the course grades for each group of the ECTS grading scale, the distribution of students with passes in the previous five years and/or in a total of at least thirty graduates is taken into consideration. When a cohort of this scale is impossible, the ECTS grading scale is replaced by the use of an institutional conversion table based on all course grades of all *Universidade do Minho's* Master Degree Courses from the previous five years. It is important to notice that not all groups of the ECTS grading scale might be represented.

ECTS Grading Scale	% of Graduates	Grades
A	10	[16-20]
B	25	[14-15]
C	30	[13]
D	25	[12]
E	10	[10-11]

4.5 Overall classification of the qualification: 13 (thirteen), C

5 Information on the function of the qualification

5.1 Access to further study:

The Master's degree allows access to doctoral studies, according to the terms described in point 8.

5.2 Professional status:

Not applicable

6 Additional information

6.1 Additional information:

In the academic year 2009/2010, the student performed the 1st year of the Erasmus Mundus Master Course EURHEO - European Masters in Engineering Rheology at *KATHOLIEKE UNIVERSITEIT LEUVEN*, Belgium, under the Erasmus Mundus Programme.

The student participated in the "Portuguese Language Course", organised by *UNIVERSIDADE DO MINHO*, Portugal, from 27/09/2010 to 13/12/2010, having achieved 4 ECTS credits.

In the academic year 2010/2011, the student attended the following Advanced Topical Modules (ATM): Bio and Food Rheology, Complex Multiphase Systems, and Complements of Materials Processing and Engineering.

The student was awarded a double degree by *UNIVERSIDADE DO MINHO*, Portugal, and *KATHOLIEKE UNIVERSITEIT LEUVEN*, Belgium.

6.2 Further information sources:

<http://www.uminho.pt>

<http://www.eurheo.eu>



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7 Certification of the Supplement

7.1 Date: 2012-07-31

7.2 Signature: _____
António Augusto Magalhães da Cunha

7.3 Capacity: Rector of *Universidade do Minho*

7.4 Official stamp or seal:
This document is officially stamped.

8 Information on the National Higher Education System

The description of the Portuguese Education System, officially provided by NARIC (National Academic Recognition Information Centre), can be found enclosed (see Appendix II).

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APPENDIX I

Transcript of Records

Course Unit	Regime (1)	Type (2)	Academic Year	Grade (3)	ECTS Grade (4)	Credits (5)	Obs. (6)
Option I - Polymer Properties	S	OP	2009/2010	11	D	15	(6)
Option II - Plastics Extrusion	S	OP	2009/2010	11	D	15	(6)
Option III - Complements of Polymer Processing	S	OP	2009/2010	11	D	15	(6)
Option IV - Injection Moulding	S	OP	2009/2010	11	D	15	(6)
Option V - Rheology in Materials Engineering	S	OP	2010/2011	14	C	5	
Option VI - Constitutive Modelling and Computational Rheology	S	OP	2010/2011	14	C	5	
Option VII - Materials Science	S	OP	2010/2011	12	C	5	
Dissertation	A	OB	2010/2011	15	B	45	
Thesis Title: "Screening of Commercial Starch for Coating Application in Textile Printing"							

Total ECTS credits achieved: 120

(1) - Regime

- A - Annual
- S - Half-yearly
- T - Trimestral

(2) - Type

- OB - Compulsory
- OP - Optional

(3) - Grade

On a 0 to 20 grading scheme, a minimum grade of 10 in each course unit is necessary to pass.

(4) - ECTS Grading Scale

ECTS Grading Scale	% of Approved Students
A	10
B	25
C	30
D	25
E	10

In order to establish the course units grades for each group of the ECTS grading scale, the distribution of students with passes in the previous five academic years and/or in a total of at least thirty students is taken into consideration. When a cohort of this scale is impossible, the ECTS grading scale is replaced by the use of an institutional conversion table based on all course units grades of all *Universidade do Minho's* Master Degree Courses from the previous five academic years. It is important to notice that not all groups of the ECTS grading scale might be represented.

(5) - ECTS Credits

- 1 academic year = 60
- 1 semester = 30
- 1 trimester = 20

(6) - Course units subject to academic recognition

The corresponding course units can be found in item 4.3 of the Diploma Supplement, whenever taken under academic mobility programmes.

(7) - Extracurricular course units

Academic Services of *Universidade do Minho*, on the thirty first of July of two thousand and twelve.

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APPENDIX II

Information on the Portuguese Higher Education System

The Framework Law on the Education System (Law nr. 46/86, dated 14 October 1986, further amended by Laws nr.115/97, dated 19 September and nr. 49/2005, dated 30 August) establishes the general legal framework of the Education System.

According to this Law, the educational system comprises three levels: basic, secondary and higher education.

Basic Education is universal, compulsory and free and comprises three cycles, the first cycle lasts for four years, the second lasts for two years and the third lasts for three years.

Secondary education is compulsory and it comprises a three year cycle (corresponding to 10th, 11th and 12th year of schooling).

Higher Education Structure

The first steps towards the legal reform of the system of higher education were made in 2005, with the introduction of the new credit system (ECTS) for the cycles of study, mobility mechanisms, diploma supplement, amongst others. Changes were also made to the Basic Law for the Education System in order to implement the Bologna Process.

The new structure divided into 3 cycles of studies was created in 2006 and it was completely implemented in Portugal in 2009/2010. Generic qualification descriptors were also defined for each of the cycles of studies, based on acquired competences, as well as the structure for the first and second cycles of study in terms of typical ECTS intervals.

Portuguese higher education includes university and polytechnic education. University education is offered by public and private university institutions while polytechnic education is offered by public and private non-university institutions. Private higher education institutions must be subject to the previous recognition of the Ministry of Education and Science. The higher education system comprises also a concordatary institution.

Licenciado degree

Both university and polytechnic institutions confer the degree of *licenciado* (*bachelor*). In polytechnic education, the cycle of studies that leads to the degree of *licenciado* has 180 credits and a normal length of six curricular semesters of students' work. In certain cases namely those covered by internal legislation or by European legislation, the cycle of studies can have up to 240 credits with a normal length of up to seven or eight curricular semesters of students' work.

In university education, the cycle of studies that leads to the degree of *licenciado* has from 180 to 240 credits and a normal length between six to eight curricular semesters of students' work.

In the first cycle of studies, the degree of *licenciado* is conferred, by universities or polytechnics institutions, to those that, after concluding all the curricular units that integrate the study programme of the *licenciatura* course, have obtained the established number of credits.

Mestre degree

Both university and polytechnic institutions confer the degree of *mestre* (*master*). The cycle of studies that leads to the degree of *mestre* has from 90 to 120 credits and a normal length of between three to four curricular semesters of students' work or in exceptional circumstances, 60 credits and a duration of two semesters, resulting from a stable and consolidated practice in that specific field at international level.

In polytechnic education, the cycle of studies that leads to the *mestre* degree must ensure predominantly that the student acquires a professional specialization. In university education, the cycle of studies that leads to the *mestre* degree must ensure that the student acquires an academic specialization resorting to research, innovation or expansion of professional competences. In university education, the *mestre* degree may also be conferred after an

integrated cycle of studies, with 300 to 360 credits and a normal length of 10 to 12 curricular semesters of students' work, in cases for which the access to the practice of a certain professional activity depends on that length of time established by legal EU standards or resulting from a stable practice consolidated in the European Union. In this cycle of studies the degree of *licenciado* is conferred to those who have obtained 180 credits corresponding to the first six semesters of work.

The degree of *mestre* is conferred to those that, after concluding all the curricular units that integrate the study programme of the *mestrado* course, have obtained the established number of credits, as well as successfully defended in public their dissertation, their project work or their traineeship report.

Doutor degree

The *Doutor* (doctor) degree is conferred by universities and university institutes. The degree of *Doutor* is conferred to those that, after concluding all the curricular units that integrate the study programme of the *Doutoramento* (doctorate) course, when applicable, and have successfully defended their thesis in the public act.

Access conditions

General regime to accede to higher education

National and foreign students wishing to apply through the general regime to the first cycle of studies, must fulfil the following conditions:

- Have successfully completed a secondary course or a national or foreign qualification legally equivalent;
- Have set for the entrance examinations required for the degree programme the student wishes to attend and get the minimal mark required (there are higher education institutions that accept foreign tests or exams);
- Have fulfilled the prerequisites for the higher education course the student wishes to attend, if required.

Special conditions

Besides the *regime geral* (general regime), there are special conditions for top level athletes, Portuguese citizens on an official mission abroad, national or foreign staff in diplomatic mission, permanent staff of the Portuguese Armed Forces and scholarship holders within the framework of cooperation agreements signed by Portugal.

Special Competitions

Besides the general regime and the special conditions there are also special competitions for applicants with certain specific qualifications thus allowing new publics to accede to higher education in a perspective of lifelong learning, namely:

- applicants over 23 years old who have passed a special exam for assessing their capacity to accede to higher education;
- holders of a specialization technological course (non higher education post-secondary course).

Admission to higher education institutions is subject to *numerus clausus*.

Those who meet the following conditions may apply to the cycle of studies that leads to the *mestre* degree:

- Holders of the *licenciado* degree or legal equivalent;



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- Holders of a foreign academic degree duly recognised as satisfying the objectives identical to the *licenciado* degree by the competent scientific body of the higher education institution where one wishes to be admitted;
- Holders of an academic, scientific or professional *curriculum vitae* that is recognized as attesting the capacity to carry out this cycle of studies by the statutorily competent scientific body of the higher education institution to which they wish to be admitted.

Those who meet the following conditions may apply to the cycle of studies that leads to the *doutor* (doctor) degree:

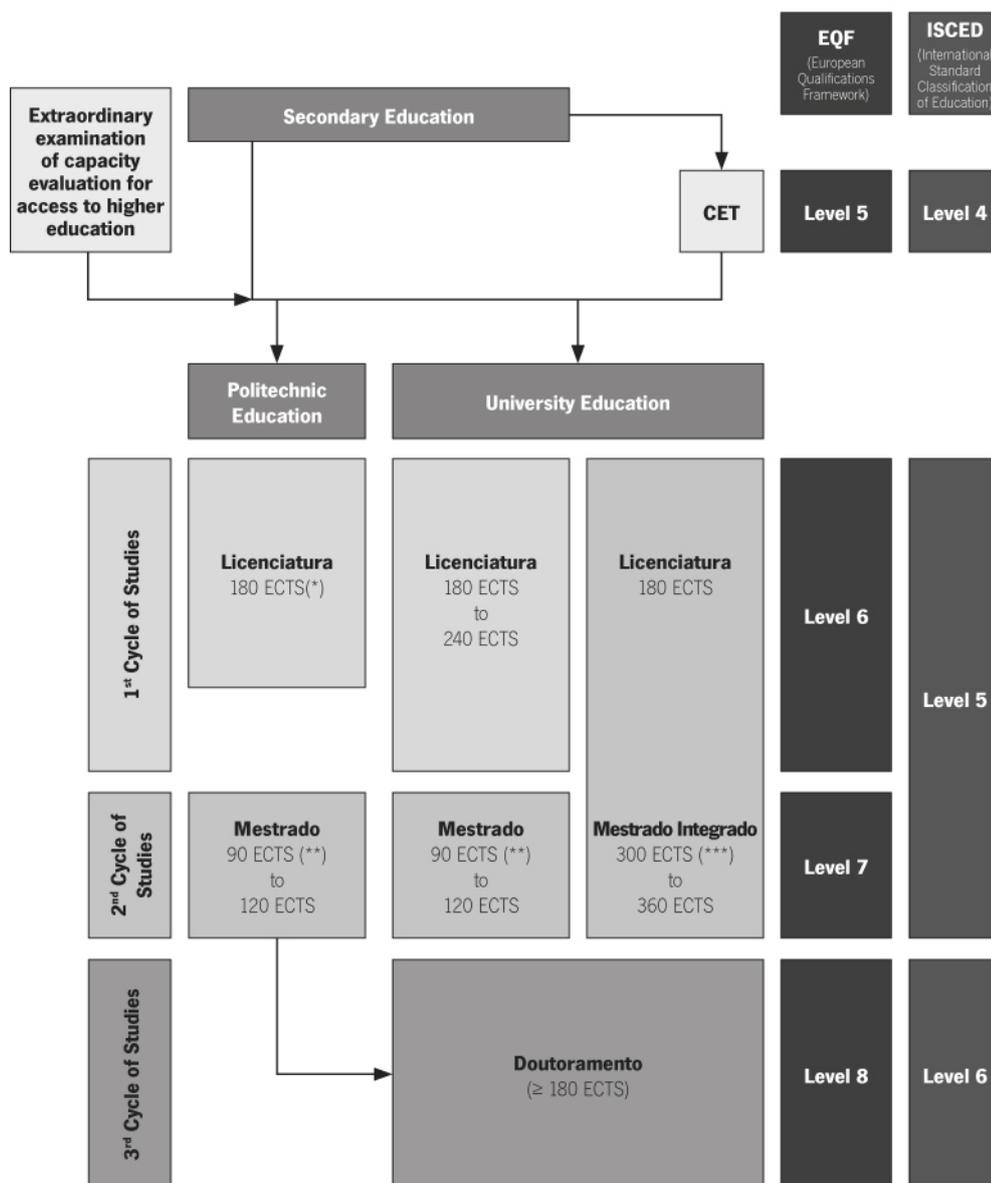
- Holders of the *mestre* (master) degree or legal equivalent;
- Holders of a *licenciado* degree who have a particularly relevant academic or scientific *curriculum vitae* that is recognized as attesting the capacity to carry out this cycle of studies by the statutorily competent scientific body of the higher education institution to which they wish to be admitted.
- Holders of an academic, scientific or professional *curriculum vitae* that is recognized as attesting the capacity to carry out this cycle of studies by the statutorily competent scientific body of the higher education institution to which they wish to be admitted.

Classification System

The degrees of *licenciado* and *mestre* shall have a final classification between 10 and 20 on a numerical scale of 0 to 20, as well as its equivalent in the European scale of comparability of classifications.

The academic degree of *doutor* is assigned a final classification pursuant to the regulating standards approved by the university that confers it.

Diagram of the Portuguese Higher Education System according to Bologna



(*) Except when in order to exercise a certain professional activity requiring education and training rating between 210 and 240 ECTS.

(**) In exceptional circumstances, and subject to the fulfillment of every requirement relating to the definition of the objectives of the degree and the conditions for acquiring the latter, a cycle of studies leading to a *Mestre* degree in a specialized field may be amount 60 credits resulting from a stable and consolidated practice in that specific field at international level.

(***) A *Mestre* degree may also be granted following an integrated cycle of studies of which the duration, for the purposes of obtaining access to a professional activity, a) is established by European Union regulations; and b) results from a regular and consolidated practice within the European Union; in such cases, a *Licenciado* degree is granted to students having obtained 180 ECTS (3 years, 6 semesters).