



INTRODUCTION

The Diploma Supplement was developed by the European Commission, Council of Europe and by 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 is free from any value-judgements, equivalence statements or suggestions about recognition. Information is provided in eight sections. Where information is not provided, an explanation will give the reason why.

1 INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1 Family name(s)

LAVANGA

1.2 Given name(s)

MARIO

1.3 Date of birth (day/month/year)

08/07/1991

1.4 Student identification number or code (if available)

758716

2 INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of the qualification and (if applicable) title conferred (in original language)

 Laurea in BIOMEDICAL ENGINEERING
 Dottore

2.2 Main field(s) of study for the qualification

L-9 Industrial Engineering

2.3 Name and status of awarding institution (in original language)

Politecnico di Milano (Università statale), Piazza Leonardo da Vinci 32, 20133 Milano

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

NA

2.5 Language(s) of instruction/examination

Italian

3 INFORMATION ON THE LEVEL OF THE QUALIFICATION

3.1 Level of qualification

1st Cycle / 6° level of the NQF (National Qualifications Framework)

3.2 Official length of programme

Three years / 180 credits

3.3 Access requirement(s)

Secondary school leaving qualification, or foreign comparable qualifications



4 INFORMATION ON THE CONTENTS AND RESULTS GAINED

4.1 Mode of study

This Course requires a full time attendance and involves classroom and laboratory activities

4.2 Programme requirements

Graduates will have to:

- possess maths' and other basic sciences' adequate knowledge for methodological and practical aspects and be able to use these skills to analyse and describe engineering problems;
- possess adequate knowledge for methodological and practical aspects of engineering sciences, related to both main and specific features, and their applications in industrial engineering, in which are able to identify, express and solve problems using the most up-to-date methods and tools;
- be able to use techniques and tools to design components, systems and processes;
- be able to conduct experiments and analyse their results;
- be able to understand the impact of engineering solutions on society and environment;
- be acquainted with professional and ethical responsibilities;
- be acquainted with business environment and culture with regards to economical, managerial and organizational aspects;
- be aware of current issues in the field;
- possess good interpersonal and decision-making skills;
- possess the basic cognitive skills in order to keep abreast of developments in the field.
- be proficient in effectively communicate, in written and oral form, in at least one European Union language other than Italian.



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

	CODE	COURSE UNITS	CFU/ECTS CREDITS	GRADE	DATE
	082919	MATHEMATICAL ANALYSIS I AND GEOMETRY	10.00	27	24/01/2011
	083103	EXPERIMENTAL PHYSICS A, THERMODYNAMICS, AND HEAT TRANSFER	10.00	29	28/01/2011
	083105	FUNDAMENTALS OF CHEMISTRY AND ORGANIC CHEMISTRY	10.00	30	11/02/2011
	061376	RATIONAL MECHANICS A	5.00	30	28/06/2011
	083041	MATHEMATICAL ANALYSIS II (FOR BIOMEDICAL ENGINEERING)	7.00	30 cum laude	29/06/2011
	084040	FUNDAMENTALS OF ELECTROMAGNETISM	10.00	30	30/06/2011
	060001	BIOLOGY AND PHYSIOLOGY	10.00	30 cum laude	05/07/2011
	083117	APPLIED MECHANICS AND DESIGN	7.00	30	25/01/2012
	085849	FUNDAMENTALS OF AUTOMATIC CONTROL	7.00	28	30/01/2012
	085850	PRINCIPLES OF ELECTRICAL CIRCUITS AND APPLICATION	8.00	30 cum laude	02/02/2012
	083118	MECHANICS OF CONTINUA AND STRUCTURES	8.00	27	07/02/2012
	085853	COMPUTER SCIENCE AND ELEMENTS OF MEDICAL INFORMATICS	10.00	30 cum laude	26/06/2012
	083533	ELECTRONICS	10.00	29	28/06/2012
	085856	BASICS OF STATISTICS AND BIOMEDICAL SIGNALS	10.00	29	09/07/2012
	086031	BIOELETTRICITÀ E BIOMEDICAL INSTRUMENTATION	10.00	30 cum laude	29/01/2013
	086028	CHEMICAL BIOENGINEERING	10.00	30	31/01/2013
	085858	BIOMECHANICS	10.00	30 cum laude	04/02/2013
	083049	INTRODUCTION TO NUMERICAL METHODS	5.00	30 cum laude	25/06/2013
	060076	BUSINESS ADMINISTRATION	5.00	29	27/06/2013
	085870	FINAL WORK (BIO LP)	3.00	--	27/06/2013
	083066	BIOMEDICAL SIGNAL PROCESSING AND MEDICAL IMAGES	10.00	30	28/06/2013
C	085867	PROJECT IN BIO-MECHANICS AND BIO-MACHINES	5.00	--	08/07/2013

C) Recognition of prior learning.

4.4 Grading scheme and, if available, grade distribution guidance

Individual subjects are graded on a scale from 1 to 30, with 18 and 30 as minimum and maximum grade respectively. A "cum laude" can be added to the maximum grade as a special distinction.

GRADE DISTRIBUTION TABLE

GRADE	%
18	8,41
19	5,73
20	7,21
21	7,00
22	7,99
23	8,42
24	9,81
25	8,98
26	8,13
27	7,96
28	7,08
29	3,25
30	6,65
30 cum laude	3,38

The table shows the percentage distributions of the marks obtained considering the 2 previous years and lessons given in study courses belonging to the same main field of study(s) for qualification of the graduate student.



4.5 Overall classification of the qualification (in original language)

Final mark: 110/110 cum laude, awarded on 22/07/2013

Final marks range from 66 to 110. A "cum laude" can be added to the maximum grade as a special distinction.

GRADE DISTRIBUTION TABLE

GRADE	%
75	0.04
76	0.04
77	0.15
78	0.22
79	0.33
80	0.95
81	1.27
82	1.86
83	1.96
84	2.47
85	2.55
86	2.55
87	2.80
88	4.37
89	4.33
90	4.84
91	4.40
92	5.06
93	5.17
94	3.67
95	4.29
96	3.93
97	3.27
98	3.35
99	3.60
100	3.09
101	3.06
102	2.77
103	2.22
104	2.51
105	2.29
106	2.26
107	2.18
108	1.89
109	1.64
110	2.47
110 cum laude	6.15

The table shows the percentage distributions of the final marks obtained considering the 2 previous years in courses belonging to the same main field of study(s) for qualification of the graduate student.

5 INFORMATION ON THE FUNCION OF THE QUALIFICATION

5.1 Access to further study

The qualification grants access to "Laurea Magistrale" (2nd degree), "Corso di Specializzazione di primo livello" (1st level Specialization Course) and "Master Universitario di primo livello" (1st level University Master)

5.2 Professional status (if applicable)

Gives access to the state exam required to practice as: JUNIOR INDUSTRIAL ENGINEER

**6 ADDITIONAL INFORMATION****6.1 Additional information****6.2 Further information sources**

<http://www.polimi.it/>; <http://www.miur.it/>;

7 CERTIFICATION OF THE SUPPLEMENT**7.1 Date (day/month/year) (*)****7.2 Name and signature (*)**

Dott.ssa Assunta Marrese

7.3 Capacity

Il Dirigente dell'Area Servizi agli Studenti e ai Dottorandi

7.4 Official stamp or seal (*)

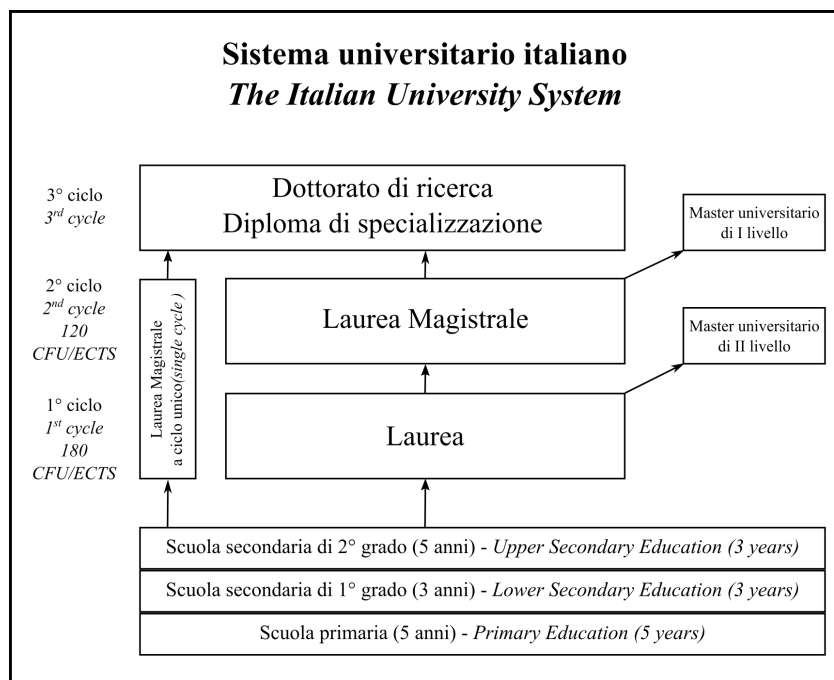
(*) Date, signature and stamp are available only if requested by the holder of the Diploma Supplement



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INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

The Italian university system is organised in three cycles, according to the Bologna structure: the main academic degrees are the Laurea (1st cycle), the Laurea Magistrale (2nd cycle) and the Dottorato di Ricerca (3rd cycle). The system also offers other study programmes and related qualifications.


First cycle

This cycle consists exclusively of Corsi di Laurea. These degree programmes provide students with an adequate command of general scientific methods and contents as well as with specific professional skills. The general access requirement is the Italian school leaving qualification awarded after completion of 13 years of schooling and passing the relevant State examination; comparable foreign qualifications may also be accepted. Admission to some degree courses may be based on specific course requirements. The studies last 3 years. The Laurea is awarded to students who have gained 180 ECTS credits (called Crediti Formativi Universitari - CFU) and satisfied all curricular requirements, including the production of a final written paper or equivalent final project. The Laurea gives access to the Corsi di Laurea Magistrale as well as to other 2nd cycle study programmes.

Second cycle

The main degree programmes in this cycle are the Corsi di Laurea Magistrale. They provide education at an advanced level for the exercise of highly qualified activities in specific areas. Access is by a Laurea degree or a comparable foreign degree; admission is based on specific course requirements determined by single universities. The studies last 2 years. The Laurea Magistrale degree is awarded to students who have gained 120 ECTS/CFU credits and satisfied all curricular requirements, including the production and public defence of an original dissertation.

Some programmes (namely, those in dentistry, medicine, veterinary medicine, pharmacy, architecture, construction engineering/architecture, law, primary education) are defined "single cycle programmes" (Corsi a ciclo unico); for these programmes access is by the Italian school



leaving qualification (or a comparable foreign qualification); admission is based on entrance exams. The studies last 5 years (6 years and 360 ECTS/CFU credits in the cases of medicine and dentistry). A Laurea Magistrale degree is awarded to students who have gained 300 ECTS/CFU credits and satisfied all curricular requirements, including the production and public defence of an original dissertation.

A Laurea Magistrale degree gives access to Corsi di Dottorato di Ricerca as well as to other 3rd cycle study programmes.

Third cycle

The main degree programmes in this cycle are Corsi di Dottorato di Ricerca (research doctorate programmes); the students/young researchers enrolled in these programmes will acquire methodologies for advanced scientific research, will be trained in new technologies and will work in research laboratories, wherever appropriate. Access is by a Laurea Magistrale degree (or a comparable foreign degree); admission is based on a competitive exam; studies last at least three years and include the completion and public defence of an original research project.

Other programmes

- Corsi di Specializzazione. These are 3rd cycle programmes intended to provide students with the knowledge and skills required for the practice of highly qualified professions, mainly in medical, clinical and surgical specialities. Admission is by a Laurea Magistrale degree (or by a comparable foreign degree) and is based on a competitive exam; studies may last from 2 (120 ECTS/CFU credits) to 6 years (360 ECTS/CFU credits) depending on the discipline. The final degree awarded is a Diploma di Specializzazione.
- Corsi di Master Universitario di primo livello. These are 2nd cycle programmes intended to provide students with further specialization or higher continuing education after completion of the first cycle. Access is by a Laurea degree (or a comparable foreign degree); admission may be subject to additional requirements. Studies last at least 1 year (60 ECTS/CFU credits). The qualification awarded (Master Universitario di primo livello) does not give access to Corsi di Dottorato di Ricerca or to any other 3rd cycle programme, since this type of course does not belong to the general requirements established at national level, but it is offered under the autonomous responsibility of each university.
- Corsi di Master Universitario di secondo livello. These are 3rd cycle programmes intended to provide students with further specialization or higher continuing education studies after completion of the second cycle. Access is by a Laurea Magistrale degree (or a comparable foreign degree); admission may be subject to additional requirements. Studies last at least 1 year (60 ECTS/CFU credits). The qualification awarded (Master Universitario di secondo livello) does not give access to Corsi di Dottorato di Ricerca or to any other 3rd cycle programmes, since this type of course does not belong to the general requirements established at national level, but it is offered under the autonomous responsibility of each university.

CREDITS

Degree courses are structured in credits (Crediti Formativi Universitari - CFU). University credits are based on the workload students need in order to achieve the expected learning outcomes. Each credit corresponds to 25 hours of student workload, including independent study. The average workload of a full time student is conventionally fixed at 60 credits per year. Thus, the CFU fully coincide with ECTS credits



Classes of Degree Courses

All degree programmes of Laurea and Laurea Magistrale sharing general educational objectives are grouped into "classes". In developing the specific learning outcomes of single programmes, Universities have to comply with some national requirements for each class concerning the types (and corresponding amount of credits) of teaching-learning activities to be included. Degrees belonging to the same class have the same legal value.

Academic Titles

Those who receive the Laurea are entitled to be called "Dottore", the holders of a Laurea Magistrale have a right to the title of "Dottore Magistrale", the Dottorato di ricerca confers the title of "Dottore di Ricerca" or "PhD".

Joint Degrees

Italian universities are allowed to establish degree programmes in cooperation with Italian and foreign partner universities, on completion of which joint or double/multiple degrees can be awarded.

Further information

Italian Qualifications Framework (Quadro dei Titoli Italiani - QTI) <http://www.quadrodeititoli.it>