

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.

1. HOLDER OF THE QUALIFICATION

1.1 Family Name / 1.2 First Name

Family name, first name

1.3 Citizenship/Nationality

Nationality (in English notation)

1.4 Student ID Number or Code

n. a.

2. QUALIFICATION

2.1 Name of Qualification (full, abbreviated; in original language)

Master of Science (M.Sc.)

Title Conferred (full, abbreviated; in original language)

n.a. - n.a.

2.2 Main Field(s) of Study

Computational Logic

2.3 Institutions Awarding the Qualification (in original language)

Technische Universität Dresden

Universidade Nova de Lisboa

Technische Universität Wien

Libera Università di Bolzano-Freie Universität Bozen

Status (Type / Control)

University / State Institution

2.4 Institution Administering Studies (in original language)

[same]

Status (Type / Control)

[same / same]

2.5 Language(s) of Instruction/Examination

English

3. LEVEL OF THE QUALIFICATION

3.1 Level

Graduate/second degree by research with thesis

3.2 Official Length of Programme

2 years

3.3 Access Requirements

Bachelor degree in Computer Science or equivalent

4. CONTENTS AND RESULTS GAINED

4.1 Mode of Study

Full-time; 3 semesters course work, 1 semester final research-oriented Master thesis

4.2 Programme Requirements/Qualification Profile of the Graduate

The course builds upon a student's sound background in mathematical logic and artificial intelligence. The course includes the engineering aspects of computational logic, how a deductive system functions, what kind of logic-based grammar can be used to process natural language, how techniques for the verification of software and hardware can be applied in industry, what kind of implementation techniques are needed for logic-based systems, what formal methods are required for computer integrated manufacturing, how formal methods for the layout of blueprints for machines and processes are applied and what problems occur in such applications.

The program is divided into:

- a. essential foundation and selected advanced modules,
- b. a project and a skills module
- c. the Master thesis.

Lectures, tutorials and seminars take place in the first three semesters. The fourth semester is intended for working on the Master thesis.

The programme focuses on the following areas: Mathematical Logic, Deduction Systems, Logic Programming, Formal Software Development Methods, Formal Hardware Design Methods, Semantics and Logical Principles of Programming Languages, Deductive Databases, Logical Principles of Cognitive Systems, Formal Methods in Mechanics, Logical Principles and Semantic Construction of Speech Processing, Mechatronics and Formal Methods and Production Systems and Robotics.

4.3 Programme Details

See final examination certificate for subjects offered in final examinations and topic of thesis, including evaluations.

4.4 Grading Scheme

Cf. Transcription of Records and Attachments

4.5 Overall Classification

[Final grade in words](#)

The final grade is determined as average of the marks for the modules and the mark for the master thesis and its defence according to the common study and examination regulations.

5. FUNCTION OF THE QUALIFICATION

5.1 Access to Further Study

Qualifies to apply for admission to doctoral studies

5.2 Professional Status

n.a.

6. ADDITIONAL INFORMATION

6.1 Additional Information

The European Master's Program in Computational Logic is offered by the following four partner institutions: Libera Università di Bolzano-Freie Universität Bozen (FUB), Italy; Technische Universität Dresden (TUD, coordinating institution), Germany; Technische Universität Wien (TUW), Austria and Universidade Nova de Lisboa (UNL), Portugal.

It is implemented as a mutually adjusted set of Master's Programs local to those universities. Students select at least two of the partner universities. They are jointly monitored by two lecturers (tutors), one from each university. Mutual recognition of credits is on the basis of modules and the MSc thesis. On the successful completion of their studies students receive a joint Master's degree from the selected universities.

6.2 Further Information Sources

On the programme: <http://www.emcl-study.eu>

On the faculties: TUD: <http://www.inf.tu-dresden.de>
 TUW: <http://www.tuwien.ac.at/lehre/masterstudien/informatik>
 FUB: <http://www.unibz.it/inf/index.html>
 UNL: <http://www.di.fct.unl.pt>

7. CERTIFICATION

This Diploma Supplement refers to the following original documents:

(Official Stamp/Seal)

8. NATIONAL HIGHER EDUCATION SYSTEM

The information on the national higher education system on the following pages provides a context for the qualification and the type of higher education that awarded it.

Head of
Examination Committee
Faculty of Computer Science

INFORMATION ON THE GERMAN HIGHER EDUCATION SYSTEM¹

Types of Institutions and Institutional Status

Higher education (HE) studies in Germany are offered at three types of Higher Education Institutions (HEI).²

- *Universitäten* (Universities) including various specialized institutions, offer the whole range of academic disciplines. In the German tradition, universities focus in particular on basic research so that advanced stages of study have mainly theoretical orientation and research-oriented components.

- *Fachhochschulen* (Universities of Applied Sciences) concentrate their study programmes in engineering and other technical disciplines, business-related studies, social work, and design areas. The common mission of applied research and development implies a distinct application-oriented focus and professional character of studies, which include integrated and supervised work assignments in industry, enterprises or other relevant institutions.

- *Kunst- und Musikhochschulen* (Universities of Art/Music) offer studies for artistic careers in fine arts, performing arts and music; in such fields as directing, production, writing in theatre, film, and other media; and in a variety of design areas, architecture, media and communication.

Higher Education Institutions are either state or state-recognized institutions. In their operations, including the organization of studies and the designation and award of degrees, they are both subject to higher education legislation.

Types of Programmes and Degrees Awarded

Studies in all three types of institutions have traditionally been offered in integrated "long" (one-tier) programmes leading to *Diplom-* or *Magister Artium* degrees or completed by a *Staatsprüfung* (State Examination).

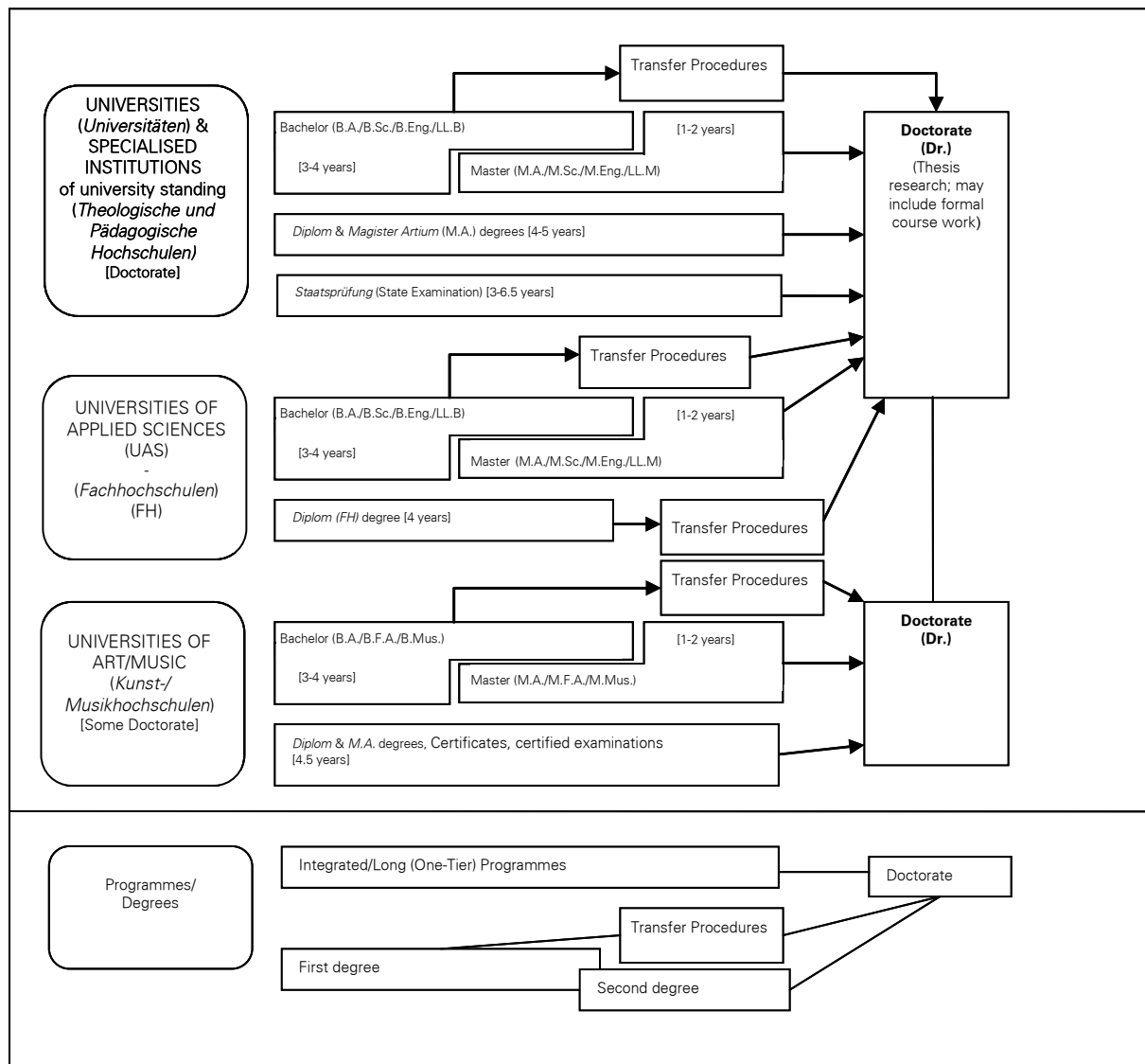
Within the framework of the Bologna-Process one-tier study programmes are successively being replaced by a two-tier study system. Since 1998, a scheme of first- and second-level degree programmes (Bachelor and Master) was introduced to be offered parallel to or instead of integrated "long" programmes. These programmes are designed to provide enlarged variety and flexibility to students in planning and pursuing educational objectives, they also enhance international compatibility of studies.

For details cf. Sec. 8.4.1, 8.4.2, and 8.4.3 respectively. Table 1 provides a synoptic summary.

Approval/Accreditation of Programmes and Degrees

To ensure quality and comparability of qualifications, the organization of studies and general degree requirements have to conform to principles and regulations established by the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany (KMK).³ In 1999, a system of accreditation for programmes of study has become operational under the control of an Accreditation Council at national level. All new programmes have to be accredited under this scheme; after a successful accreditation they receive the quality-label of the Accreditation Council.⁴

Table 1: Institutions, Programmes and Degrees in German Higher Education



Organization and Structure of Studies

The following programmes apply to all three types of institutions. Bachelor's and Master's study courses may be studied consecutively, at various higher education institutions, at different types of higher education institutions and with phases of professional work between the first and the second qualification. The organization of the study programmes makes use of modular components and of the European Credit Transfer and Accumulation System (ECTS) with 30 credits corresponding to one semester.

Bachelor

Bachelor degree study programmes lay the academic foundations, provide methodological skills and lead to qualifications related to the professional field. The Bachelor degree is awarded after 3 to 4 years.

The Bachelor degree programme includes a thesis requirement. Study courses leading to the Bachelor degree must be accredited according to the Law establishing a Foundation for the Accreditation of Study Programmes in Germany.⁵

First degree programmes (Bachelor) lead to Bachelor of Arts (B.A.), Bachelor of Science (B.Sc.), Bachelor of Engineering (B.Eng.), Bachelor of Laws (LL.B.), Bachelor of Fine Arts (B.F.A.) or Bachelor of Music (B.Mus.).

Master

Master is the second degree after another 1 to 2 years. Master study programmes must be differentiated by the profile types "more practice-oriented" and "more research-oriented". Higher Education Institutions define the profile of each Master study programme.

The Master degree study programme includes a thesis requirement. Study programmes leading to the Master degree must be accredited according to the Law establishing a Foundation for the Accreditation of Study Programmes in Germany.⁶

Second degree programmes (Master) lead to Master of Arts (M.A.), Master of Science (M.Sc.), Master of Engineering (M.Eng.), Master of Laws (L.L.M.), Master of Fine Arts (M.F.A.) or Master of Music (M.Mus.). Master study programmes, which are designed for continuing education or which do not build on the preceding Bachelor study programmes in terms of their content, may carry other designations (e.g. MBA).

Integrated "Long" Programmes (One-Tier): Diplom degrees, Magister Artium, Staatsprüfung

An integrated study programme is either mono-disciplinary (*Diplom* degrees, most programmes completed by a *Staatsprüfung*) or comprises a combination of either two major or one major and two minor fields (*Magister Artium*). The first stage (1.5 to 2 years) focuses on broad orientations and foundations of the field(s) of study. An Intermediate Examination (*Diplom-Vorprüfung* for *Diplom* degrees; *Zwischenprüfung* or credit requirements for the *Magister Artium*) is prerequisite to enter the second stage of advanced studies and specializations. Degree requirements include submission of a thesis (up to 6 months duration) and comprehensive final written and oral examinations. Similar regulations apply to studies leading to a *Staatsprüfung*. The level of qualification is equivalent to the Master level.

- Integrated studies at *Universitäten (U)* last 4 to 5 years (*Diplom* degree, *Magister Artium*) or 3 to 6.5 years (*Staatsprüfung*). The *Diplom* degree is awarded in engineering disciplines, the natural sciences as well as economics and business. In the humanities, the corresponding degree is usually the *Magister Artium* (M.A.). In the social sciences, the practice varies as a matter of institutional traditions. Studies preparing for the legal, medical, pharmaceutical and teaching professions are completed by a *Staatsprüfung*.

The three qualifications (*Diplom*, *Magister Artium* and *Staatsprüfung*) are academically equivalent. They qualify to apply for admission to doctoral studies. Further prerequisites for admission may be defined by the Higher Education Institution, cf. Sec. 8.5.

- Integrated studies at *Fachhochschulen (FH)*/Universities of Applied Sciences (UAS) last 4 years and lead to a *Diplom (FH)* degree. While the *FH/UAS* are non-doctorate granting institutions, qualified graduates may apply for admission to doctoral studies at doctorate-granting institutions, cf. Sec. 8.5.

- Studies at *Kunst- and Musikhochschulen* (Universities of Art/Music etc.) are more diverse in their organization, depending on the field and individual objectives. In addition to *Diplom/Magister* degrees, the integrated study programme awards include Certificates and certified examinations for specialized areas and professional purposes.

Doctorate

Universities as well as specialized institutions of university standing and some Universities of Art/Music are doctorate-granting institutions. Formal prerequisite for admission to doctoral work is a qualified Master (UAS and U), a *Magister* degree, a *Diplom*, a *Staatsprüfung*, or a foreign equivalent. Particularly qualified holders of a Bachelor or a *Diplom (FH)* degree may also be admitted to doctoral studies without acquisition of a further degree by means of a procedure to determine their aptitude. The universities respectively the doctorate-granting institutions regulate entry to a doctorate as well as the structure of the procedure to determine aptitude. Admission further requires the acceptance of the Dissertation research project by a professor as a supervisor.

Grading Scheme

The grading scheme in Germany usually comprises five levels (with numerical equivalents; intermediate grades may be given): "*Sehr Gut*" (1) = Very Good; "*Gut*" (2) = Good; "*Befriedigend*" (3) = Satisfactory; "*Ausreichend*" (4) = Sufficient; "*Nicht ausreichend*" (5) = Non-Sufficient/Fail. The minimum passing grade is "*Ausreichend*" (4). Verbal designations of grades may vary in some cases and for doctoral degrees.

In addition institutions may already use the ECTS grading scheme, which operates with the levels A (best 10 %), B (next 25 %), C (next 30 %), D (next 25 %), and E (next 10 %).

Access to Higher Education

The General Higher Education Entrance Qualification (*Allgemeine Hochschulreife, Abitur*) after 12 to 13 years of schooling allows for admission to all higher educational studies. Specialized variants (*Fachgebundene Hochschulreife*) allow for admission to particular disciplines. Access to *Fachhochschulen* (UAS) is also possible with a *Fachhochschulreife*, which can usually be acquired after 12 years of schooling. Admission to Universities of Art/Music may be based on other or require additional evidence demonstrating individual aptitude. Higher Education Institutions may in certain cases apply additional admission procedures.

National Sources of Information

- *Kultusministerkonferenz (KMK)* [Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany]; Lennéstrasse 6, D-53113 Bonn; Fax: +49[0]228/501-229; Phone: +49[0]228/501-0
- Central Office for Foreign Education (ZaB) as German NARIC; www.kmk.org; E-Mail: zab@kmk.org
- "Documentation and Educational Information Service" as German EURYDICE-Unit, providing the national dossier on the education system (www.kmk.org/doku/bildungswesen.htm); E-Mail: eurydice@kmk.org
- *Hochschulrektorenkonferenz (HRK)* [German Rectors' Conference]; Ahrstrasse 39, D-53175 Bonn; Fax: +49[0]228/887-110; Phone: +49[0]228/887-0; www.hrk.de; E-Mail: sekr@hrk.de
- "Higher Education Compass" of the German Rectors' Conference features comprehensive information on institutions, programmes of study, etc. (www.higher-education-compass.de)

¹ The information covers only aspects directly relevant to purposes of the Diploma Supplement. All information as of 1 July 2005.

² *Berufsakademien* are not considered as Higher Education Institutions, they only exist in some of the *Länder*. They offer educational programmes in close cooperation with private companies. Students receive a formal degree and carry out an apprenticeship at the company. Some *Berufsakademien* offer Bachelor courses which are recognized as an academic degree if they are accredited by a German accreditation agency.

³ Common structural guidelines of the *Länder* as set out in Article 9 Clause 2 of the Framework Act for Higher Education (HRG) for the accreditation of Bachelor's and Master's study courses (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 10.10.2003, as amended on 21.4.2005).

⁴ Law establishing a Foundation "Foundation for the Accreditation of Study Programmes in Germany", entered into force as from 26.2.2005, GV. NRW. 2005, nr. 5, p. 45 in connection with the Declaration of the *Länder* to the Foundation "Foundation for the Accreditation of Study Programmes in Germany" (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 16.12.2004).

⁵ See note No. 4.

⁶ See note No. 4.

INFORMATION ON THE AUSTRIAN HIGHER EDUCATION SYSTEM

As of 10th July 2008

Post-secondary Education in Austria

- The Austrian post-secondary **university level sector** (Hochschulsektor) consists of
 - universities (Universitäten), maintained by the state; maintainers of university of applied sciences degree programmes
 - (Fachhochschul-Studiengänge) incorporated upon the basis of private or public law and subsidised by the state, with state accreditation (some of which are entitled to use the designation Fachhochschule);
 - private universities (Privatuniversitäten), operated by private organisations with state accreditation;
 - university colleges of education (Pädagogische Hochschulen) maintained by the state or operated by private organisations with state accreditation;
 - universities of philosophy and theology (Philosophisch-Theologische Hochschulen), operated by the Roman Catholic Church.
- The **non-university post-secondary sector** (außeruniversitärer postsekundärer Sektor) consists of
 - academies for midwifery (Hebammenakademien);
 - clinical technical academies (Medizinisch-Technische Akademien);
 - military academies (Militärische Akademien);
 - the school of international studies (Diplomatische Akademie);
 - certain training institutions for psychotherapists (Psychotherapeutische Ausbildungseinrichtungen);
 - conservatories (Konservatorien);
 - certain business schools (Wirtschaftsschulen).

The following text addresses exclusively the university level sector.

Overall Structure of University Level Higher Education

There are currently two different systems of degree programmes in Austria: an older system without reference to the Bologna process and a newer one with reference to it.

- Under the auspices of the **older system** of diploma degree programmes (Diplomstudien), the first degree awarded is the diploma degree (Diplomgrad).

An Austrian higher secondary school leaving certificate or its equivalent is the general qualification necessary for enrolling in a diploma degree programme; conclusion of a diploma degree programme entitles degree holders to enrol in doctoral degree programmes. A diploma degree (Diplomgrad) is awarded by Austrian universities after a course of study consisting of 240 to 360 ECTS credits. Full degree titles are gender specific designations: Magister for men; Magistra for women. Degree titles also include a general description of the field of study in which they were obtained, e.g. Magister philosophiae. In the fields of engineering, the degree titles are Diplom-Ingenieur/in. Degrees awarded in medicine and dentistry are exceptions to the above. The first degrees awarded after the completion of these degree programmes consisting of 360 ECTS credits are Doctor medicinae universae and Doctor medicinae dentalis, respectively.

Graduates of university of applied sciences programmes that consist of 240 to 300 ECTS credits are awarded, analogous to university studies, a university of applied science diploma degree (Fachhochschul-Diplomgrad) contingent upon discipline: either a Diplom-Ingenieur/in (FH) for fields of engineering or Magister/Magistra (FH) in other fields of study.

- The **new system** is based on the distinction between undergraduate and graduate studies. Upon completion of an undergraduate programme (Bachelorstudium at universities; Fachhochschul-Bachelorstudiengang; Studiengang at university colleges of education; 180 ECTS credits), a bachelor's degree (designation: „Bachelor of/in ...“) is awarded. Upon completion of a graduate programme (Masterstudium at universities comprising 120 ECTS credits or, respectively, Fachhochschul-Masterstudiengang comprising 60 to 120 ECTS credits), a master's degree (designation: „Master of/in ...“) is awarded. In the fields of engineering, the designation of the master's degree can also be „Diplom-Ingenieur/in“.

Recipients of these diploma degrees from the old system or a master's degrees from the new system (including the ones awarded in both cases by the universities of applied sciences) are entitled to enrol in doctoral degree programmes (Doktoratsstudium) at universities. A doctoral degree (Doktorgrad with the designation Doktor/in) is awarded after a course of study consisting of 120 ECTS credits; the academic title of “Doctor of Philosophy”, abbreviated as “PhD,” is awarded after a research intensive course of study consisting of 180 to 240 ECTS credits.

In addition to the degree programmes (ordentliche Studien) described above, there are nondegree programmes (außerordentliche Studien) consisting of certificate university programmes for further education (Universitätslehrgänge) and individual courses in scientific

subjects, both at universities, certificate university of applied sciences programmes for further education (Lehrgänge zur Weiterbildung) at universities of applied sciences, and certificate university college programmes for further education (Hochschullehrgänge) at university colleges of education.

Diploma Degree Programme (Diplomstudium)

Admission to a diploma degree programme is granted upon the basis of the Austrian higher secondary school leaving certificate (Reifezeugnis), its foreign equivalent, or the successful completion of a special university entrance qualification examination (Studienberechtigungsprüfung). Students of compulsory lower schools who have completed additional schooling in the form of apprenticeships as skilled workers also may take a vocationally based examination acknowledged as equivalent to the higher secondary school leaving certificate (Berufsreifeprüfung). Admission to diploma degree programmes in the arts is based on aptitude ascertained by admission examinations. Admission to university of applied sciences diploma degree programmes may also take place upon the basis of previous vocational or technical experience and qualifications of applicants. In some fields of study (in particular human medicine and dentistry, and university of applied sciences diploma degree programmes) admission is based on a selective admission process.

A degree programme may be divided into stages (Studienabschnitte). The length of each stage of the degree programme as well as the areas of study (Fächer) and content required are articulated in curricula that distinguish between required subjects (Pflichtfächer) and electives (Wahlfächer). Each stage concludes with a diploma examination (Diplomprüfung).

University of applied sciences diploma degree programmes and some diploma degree programmes at universities include an internship or practical training. The approval of a diploma thesis (Diplomarbeit) is a prerequisite for admission to the concluding diploma examination.

Bachelor Degree Programme (Bachelorstudium)

Admission to a bachelor degree programme is granted upon the basis of the Austrian higher secondary school leaving certificate (Reifezeugnis), its foreign equivalent, or the successful completion of a special university entrance qualification examination (Studienberechtigungsprüfung). Students of compulsory lower schools who have completed additional schooling in the form of apprenticeships as skilled workers may take a vocationally based examination acknowledged as equivalent to the higher secondary school leaving certificate (Berufsreifeprüfung). Admission to bachelor degree programmes in the arts is based on aptitude ascertained by admission examinations. Admission to university of applied sciences bachelor degree programmes may also take place upon the basis of previous vocational or technical experience and qualifications of applicants. In some fields of study (in particular university of applied sciences bachelor degree programmes and study programmes at university colleges of education) admission is based on a selective admission process.

Areas/Modules of study (Fächer/Module) are laid down in curricula. As a rule, two substantial bachelor's papers or projects (Bachelorarbeiten) must be completed in the process of completing degree programme requirements. University of applied sciences bachelor degree programmes and some bachelor degree programmes at universities include an internship or practical training. The programme can conclude with a bachelor's examination (Bachelorprüfung).

Master Degree Programme (Masterstudium)

Admission to a master degree programme is granted on the basis of the successful completion of an Austrian bachelor degree programme (Bachelorstudium), or a comparable post-secondary degree acknowledged being its equivalent.

Areas/Modules of study (Fächer/Module) are laid down in curricula. A main emphasis is the composition of a master's thesis (Masterarbeit). This degree programme concludes with a master's examination (Masterprüfung). The approval of the master's thesis (Masterarbeit) is a prerequisite for admission to this examination.

At university colleges of education no master degree programmes are offered.

Doctoral Degree Programme (Doktoratsstudium)

Admission to a doctoral degree programme at a university is granted on the basis of the successful completion of an Austrian diploma or master degree programme, or a comparable post-secondary degree acknowledged being their equivalents.

Contents and requirements of study are laid down in curricula. The focus lies with the drafting of a dissertation as the result of self-guided research performance. This degree programme concludes with the approval of the dissertation and with a comprehensive doctoral examination (Rigorosum) or a defense.

At universities of applied sciences and at university colleges of education no doctoral degree programmes are offered.

Evaluation of performance and grading system

According to the modalities for examinations outlined in the curricula, achievement may be evaluated upon the basis of oral and written exams or project related work. In principle oral examinations are open to the public.

Grades for examinations taken in individual courses:

positive:

1 = sehr gut

2 = gut

3 = befriedigend

4 = genügend

mit Erfolg teilgenommen

negative:

5 = nicht genügend

ohne Erfolg teilgenommen

Grades for comprehensive examinations covering materials from various subjects:

positive:

mit Auszeichnung bestanden

bestanden

negative:

nicht bestanden

Source:

ENIC NARIC AUSTRIA - Anerkennung von Hochschulabschlüssen
National Academic Recognition Information Centre

http://www.bmwf.gv.at/wissenschaft/international/enic_naric_austria/diploma_supplement/the_system_of_austrian_higher_education/

INFORMATION ON THE ITALIAN HIGHER EDUCATION SYSTEM

Since 1999, Italian university studies have been fully reformed so as to meet the objectives of the "Bologna process". The university system is now organised on 3 cycles: the 1st cycle academic degree, that is the Laurea, grants access to the 2nd cycle, and the Laurea Specialistica / Magistrale, the main degree of the 2nd cycle, gives access to 3rd cycle doctorate programmes resulting in the degree called Dottorato di Ricerca.

In addition to the mentioned degree sequence after the Bologna pattern, the system offers other degree programmes and related degrees both within the 2nd and 3rd cycle.

First cycle.

Undergraduate studies consist exclusively in Corsi di Laurea-CL (1st degree courses) aimed at guaranteeing undergraduate students an adequate command of general scientific methods and contents as well as specific professional skills. General access requirement is the Italian school leaving qualification (Diploma di Superamento dell'Esame di Stato conclusivo dei corsi di Istruzione Secondaria Superiore), awarded on passing the relevant state examinations, after completion of 13 years of global schooling; also foreign comparable qualifications may be accepted. Admission to individual degree courses may be subject to specific course requirements.

First degree courses last 3 years. The Laurea (L, 1st degree, and bachelor-level of the Bologna process) is awarded to undergraduates who have earned 180 ECTS credits. The L allows transition to the labour market, access to the civil service and/or regulated professions; it also grants access to all degree programmes of the 2nd cycle.

Second cycle.

Postgraduate studies include A) Corsi di Laurea Specialistica/Corsi di Laurea Magistrale-CLS/CLM; B) Corsi di Master Universitario di 1° livello-CMU1.

A) CLS/CLM are aimed at providing postgraduates with an advanced level of education for the exercise of a highly qualified activity in specific areas. Access to CLS/CLM is by the Italian 1st degree (L) or a foreign comparable degree; admission is subject to specific course requirements determined by individual universities; workload: 120 ECTS credits; length: 2 years. The final degree, Laurea Specialistica/Magistrale-LS/LM (master-level of the Bologna process), is awarded to those graduates who, once satisfied all curricular requirements, have also defended an original dissertation in the final degree examination. The change of the degree name from Laurea Specialistica into Laurea Magistrale was agreed upon in 2004.

A limited number of 2nd cycle programmes, namely those leading to professions regulated by EU sectoral directives (in dentistry, human medicine, pharmacy, veterinary medicine, architecture), are defined "one long cycle degree programmes" (Corsi di Laurea Specialistica/Magistrale a ciclo unico-CLSU/CLMU); they differ from the majority of usual CLS/CLM in the following characteristic features: access is by the Italian school leaving diploma or a foreign comparable qualification; admission is always subject to entrance exams; curricula consist of just one long cycle of 5-6 years (at present, only the CLSU/CLMU in human medicine takes 6 years), and a total number of 300-360 ECTS credits.

All LS/LM and LSU/LMU allow transition to the labour market, access to the civil service and/or regulated professions; they also grant access to research doctorate programmes as well as to all other degree courses of the 3rd cycle.

B) CMU1 consist in advanced scientific courses or higher continuing education studies, open to the holders of a Laurea-L or a foreign

comparable degree; admission may be subject to additional conditions. Course length is min. 1 year. The degree Master Universitario di 1° livello-MU1 (1st level university master) is awarded to graduates who have earned 60 credits at least. The MU1 does not give access to DR programmes nor to other 3rd cycle degree courses.

Third cycle.

It covers the following typologies of degree courses:

A) Corsi di Dottorato di Ricerca-CDR (research doctorate programmes); B) Corsi di Specializzazione-CS (specialisation courses); C) Corsi di master Universitario di 2° livello-CMU2 (2nd level university master courses).

A) CDR aim at training postgraduates for very advanced scientific research or for professional appointments of the highest consequence; they envisage the use of suitable teaching methodologies such as updated technologies, study periods abroad, stages in specialistic research centres. Access is by an Italian 2nd degree (LS/LM) or a foreign comparable degree; admission is subject to the passing of very competitive exams; legal length must be min. 3 years; the drawing up of an original dissertation is necessary for the awarding of the 3rd degree called Dottorato di Ricerca-DR (research doctorate); the corresponding personal title is Dottore di Ricerca.

B) CS are devised to provide postgraduates with knowledge and abilities as requested in the practice of highly qualifying professions; the majority concerns medical, clinical and surgical specialities, but CS have been also established for the advanced education and professional training in different contexts. CS may be established exclusively in application of specific Italian laws or EU directives. Access is by an LS/LM or by a foreign comparable degree; admission is subject to the passing of a competitive examination; course length is min. 2 years. The final degree, called "Diploma di Specializzazione"-DS, gives the right to the title as "Specialista".

C) CMU2 consist in advanced scientific courses or higher continuing education studies, open to the holders of an LS or a foreign comparable degree; admission may be subject to additional conditions. Studies take min. 1 year. The degree (Master Universitario di 2° livello-MU2) is awarded to postgraduates who have earned min. 60 credits.

Credits: degree courses are usually structured in credits (crediti formativi universitari - CFU). 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/year.

Classes of Degree Courses: all CL and CLS/CLM sharing the same educational objectives and the same fundamental types of teaching-learning activities are organised in groups called "classi di appartenenza" (classes of degree courses). The content of individual degree courses is autonomously determined by universities; however, when establishing a CL or a CLS/CLM, 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 latest university legislation has defined the academic titles corresponding to the degrees of the Bologna sequence. The L entitles to be called "Dottore", the holders of an LS/LM have a right to the title as "Dottore Magistrale, the DR attributes the title as "Dottore di Ricerca".

Joint Degrees: Italian universities are allowed to establish all the degree programmes in cooperation with foreign partner universities, both European and non-European; they may therefore design integrated curricula on completion of which joint or double/multiple degrees are awarded.

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. Preschool education is optional and is for children between the ages of 3 and the age of entering basic education. Secondary education is not compulsory and it comprises a 3-year cycle (corresponding to 10th, 11th and 12th year of schooling).

Higher Education Structure

Higher Education includes university and polytechnic education. University education is offered by public, private and cooperative university institutions and polytechnic education is offered by public, private and cooperative non-university institutions. Private higher education institutions must be subject to the previous recognition of the Ministry of Science, Technology and Higher Education.

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 1st cycle of studies, the degree of *licenciado* is conferred 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. 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 only conferred by university institutions. 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 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.

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;
- Holders of a foreign academic degree conferred following a 1st cycle of studies organized according to the principles of the Bologna Process by a State that has subscribed this Process;
- 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