

## Studies on Higher Education



# THE DOCTORATE IN THE EUROPE REGION

compiled by  
**Dr. Oleg KOUPTSOV**

**1994**

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**CEPES Studies on Higher Education**

**COLLECTION ED/SDI**

**THE DOCTORATE  
IN THE  
EUROPE REGION**

**Dr. Oleg KOUPTSOV**  
(compiler)

**Bucharest**

**1994**

## **ABOUT THE COMPILER**

Dr. Oleg Kouptsov was educated at the Far East Polytechnic Institute of Vladivostok. For sixteen years after graduation, he worked at the institute, first as an assistant professor, then as a lecturer, and finally as an associate professor (docent). He was subsequently appointed Deputy Head of the Department of the System of Advanced Training and Retraining of Managers and Specialists of the National Economy of the USSR Ministry for Higher Education in which capacity he also served as Head of State Inspection for this system. In his position, he dealt with postgraduate professional education. As of 1990, he has been a Programme Specialist at CEPES/UNESCO.

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## INTRODUCTION

The doctorate is one of the oldest surviving degrees which can be earned in European universities. It has shown remarkable stability throughout many centuries.

During the last decades, however, doctoral course programmes have also undergone numerous changes both as to structure and as to content. Lack of knowledge of these changes creates difficulties both with regard to admission to postdoctoral studies and to entering a profession in a country other than that in which the doctorate was awarded. Thus mobility and international academic as well as professional co-operation are hampered. Indeed, the growing mobility of researchers and professionals in the countries of the Europe Region has created a need for accurate and updated knowledge about studies leading to higher academic degrees.

Of course, information about the doctorate does exist, but it is disparate, often not comparable, available only upon request, and is limited to individual institutions and occasional national systems. In addition, there have been repeated reforms and changes in practically all the countries of Europe regarding doctoral studies. A more comprehensive picture is therefore needed.

The goal of this study is to provide up-to-date information on the requirements and conditions for awarding doctoral degrees and to investigate the present state of the doctorate in the countries belonging to the UNESCO Europe Region. The study provides university teachers and researchers as well as decision-makers with the information which they need to understand all the facets of doctoral studies. It offers information about the existing situation and trends in the development of the doctorate in the Europe Region of a sort which can assist the ongoing process of bringing higher education into harmony with technological progress and social change as well as with other institutional transformations. A study on doctoral degrees of this kind will not only facilitate individual recognition procedures but also serve as a basis for joint decisions among institutions, faculties, universities, and countries with regard to the mutual recognition of doctoral degrees.

A more accurate understanding of the studies leading to doctoral degrees in the countries concerned would also help policy-making bodies identify existing trends in these studies. Such understanding might also reveal whether or not the trends in question are the result of scientific and technological evolution or of complex social and cultural developments. Decision makers would thus be assisted in making appropriate decisions. The examination of the features of the doctorate in the countries of the Europe Region may enhance the efforts

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underway to render different structures of higher education more transparent, thus facilitating both academic and professional mobility.

This study is based on the answers to a questionnaire prepared by CEPES and additional information presented by the individual countries on their respective doctoral programmes. Some countries (i.e., the Czech Republic, France, Norway, Portugal, and the United Kingdom) provided CEPES with prepared descriptions of their systems of doctoral studies. In the case of the United States, permission was kindly granted for CEPES to use portions of the brochure, **The Doctor of Philosophy Degree** (Washington D. C., 1990), which was published by the Council of Graduate Schools. The description of the doctorate in the USA is thus more-or-less a shortened version of this brochure. In the case of other countries, the descriptions of the doctorate have been written at CEPES on the basis of information provided by them. Each description has been sent, when necessary, to the authorities of the respective country for checking and revising.

The descriptions all have the same structure including the following sections:

1. General Information.
2. Institutional Framework.
3. The Main Route Leading to the Doctor's Degree:
  - 3.1. Admission
  - 3.2. Organization of Doctoral Studies;
  - 3.3. Programme;
  - 3.4. Dissertation.
4. Other Routes Leading to the Doctor's Degree.
5. The Second Doctor's Degree.
6. Recognition.

This uniform structure was designed intentionally in order to facilitate the comparison of different doctoral systems.

Nevertheless, the study has some limitations. First, not all the countries of the Europe Region are presented. Some countries, despite our insistent requests, did not provide CEPES with the necessary information. Others became independent states and members of the Europe Region after the study had been launched. Secondly, only general information about doctorates is reflected here. More detailed information should be sought in the respective country or institution. The references at the end of the study do not cover all or even the majority of publications on the subject. They constitute only the sources of information which were presented by the countries and were used in the elaboration of the study.

Many people have been involved in the preparation of this study. I would like to thank all those who organized the collection of information in their countries, provided CEPES with it, and reviewed draft descriptions. My special thanks go to the CEPES liaison officers who were the core persons in making contributions on the doctorate in their countries. I wish, in particular, to express my gratitude to Mr. Ilia Prifti (Albania); Dr. Huber, Mr. Gottfried Bacher, Mag. Reinhard Nobauer



## INTRODUCTION

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Programme Specialist

# ALBANIA

## 1. GENERAL INFORMATION

In Albania, the doctorate is regarded as a stage of postgraduate studies. It is aimed at the training of highly qualified personnel, primarily for higher education and research. The doctorate is awarded following success in an advanced postgraduate programme which requires at least three years of study following award of a diploma of advanced postgraduate studies.

The system of academic degrees in Albania is presented in the Table below.

Field of study	Number of years elapsed since completion of secondary education									
	3	4	5	6	7	8	9	10	11	
1. Education	Di	Di	DPS			D				
2. Humanities		Di								
3. Fine arts		Di								
4. Law		Di	DPS			D				
5. Economics and social sciences		Di	DPS					D		
6. Administration, business, commerce		Di		DPS				D		
7. Exact and natural sciences		Di.....	Di	DPS....	DPS				D .....	D
8. Engineering, technology			Di	DPS						D
9. Medical sciences				Di	DPS					D
10. Agriculture			Di	DPS				D		

Di - university diploma;

DPS - diploma of advanced postgraduate studies;

D - doctor's degree.

### Notes:

1. Albanian higher education is currently in the process of reorganisation. The duration of postgraduate studies is not yet fixed. Therefore, the above table should be regarded as a general rather than as a definitive guide.
2. According to the new regulations, postgraduate studies can be divided into two stages. The first stage lasts one to two years and leads to the diploma of advanced postgraduate studies, which could be an equivalent of the master's degree. This diploma gives its holder the right to proceed to the second stage which takes at least three years of study and leads to the doctor's degree.

## 2. INSTITUTIONAL FRAMEWORK

Doctoral studies are regulated by Act of the Council of Ministers, No. 351 of 30 June 1993, and the Regulation of the Commission for Scientific Qualifications.

The universities and research institutions have the right to set up doctoral studies and to confer the doctor's degree. This right is granted by the Commission.

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for Scientific Qualifications which has general supervisory authority over doctoral studies in Albania. A proposal to set up doctoral studies, which a university department or research institution submits to the Commission for Scientific Qualifications, should be accompanied by documents indicating the available academic staff, the financial sources and equipment, and a description of a programme of doctoral studies.

A planning procedure must be followed both as to the number of candidates and of specialities. The Committee for Science and Technology, in collaboration with the universities and research institutions concerned, makes up the plan which annually specifies the fields of doctoral studies and the number of places available in each of them.

The financing of doctoral studies can come from different sources: the state, institutions in which students were employed, and the doctoral students themselves. For those candidates who enrolled for doctoral studies immediately after graduation from a university, the expenses for doctoral studies are covered by the Ministry of Education. For candidates with post-university practice, the Ministry covers only thirty percent of the expenses while the rest should be reimbursed by the institution in which the student was employed or by the doctoral student himself.

Doctoral students receive scholarships the amounts of which are forty percent higher than the scholarships awarded to undergraduate students. They also enjoy the right to live on the campus or in a hostel belonging to the department and to benefit from all student facilities.

### **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

Holders of the diploma of advanced postgraduate studies who are no more than thirty-two years old are admitted to doctoral studies. There are no other admission restrictions.

Each applicant is required to present to the respective department the following:

- his or her diploma of advanced postgraduate studies;
- a recommendation from his or her employer;
- other documents testifying to his or her activities such as certificates, publications, etc.;
- a declaration that he or she will cover part of his or her doctoral studies-related expenses.

Since the number of available places is limited, admission to doctoral studies is competitive. When selecting the candidates, the following is taken into

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consideration: success in previous studies, professional experience, personal research undertaken, recommendations, and the results of entrance examinations in the field of specialization and in a foreign language. The selected applicants are registered as doctoral students by the respective department.

### **3.2. Organization of Doctoral Studies**

Doctoral studies are full-time with a nominal duration of three years, but the actual period of time needed to complete a doctorate is usually longer.

Each doctoral student has a specially appointed supervisor under the guidance of which he or she prepares a doctoral thesis. Supervisors are usually selected from among full and associate professors. A supervisor cannot have more than two doctoral students at a time. The supervisory activity can be either remunerated with additional salary or considered to be part of the supervisor's teaching and research load.

Doctoral students may meet with their supervisors as many times as needed. They may also receive advisory help from other academics in and outside the country.

Study programmes are planned individually. The progress made is discussed with the supervisor and in seminars. In case the student fails to fulfill his or her duties as required by the study programme, he or she will be obliged to reimburse the costs incurred.

The award of the doctor's degree creates an entitlement to further employment in higher education and research.

### **3.3. Programme**

The programme of doctoral studies consists only of research leading to the writing and defense of a doctoral thesis. No postgraduate courses are offered.

### **3.4. Dissertation**

Topics for dissertations are submitted to the Committee for Science and Technology for its approval. They should be in line with the research and development programmes adopted by the Council of Ministers.

Each dissertation is expected to be a scholarly work which contributes to the progress of science, technology, and culture in the country as well as to its economy. It must reveal original findings derived through the process of scientific research and knowledge of research methodology.

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A dissertation is presented in the form of a monograph in the national or in a foreign language. In addition, an abstract of the dissertation and publications on the subject should be submitted. The abstract is disseminated to the institutions concerned .

Two or three experts in the field are appointed as official opponents in order to assess the dissertation and to formulate opinions as to whether or not it meets the normal requirements for doctoral dissertations.

The defense of the dissertation is the final stage of doctoral studies. It is public and open to anybody who wishes to attend it. The dissertation is defended before a committee chosen for each dissertation. Designated by the Commission for Scientific Qualifications, it is composed of five full or associate professors, experts in the field. Three members of the committee should be from outside the institution in which the dissertation was prepared.

After the successful defense of the dissertation, the candidate is granted the doctor's degree and a diploma so testifying which is issued by the director of the given institution. The new doctorate holder is registered by the Commission for Scientific Qualifications. In case of failure, the candidate may review his or her dissertation and undertake another attempt at defending it.

The copy of the dissertation must be deposited in the library of the awarding institution and in the National Library. Further copies of the dissertation are available in xerox form.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctor's degree.

### **5. THE SECOND DOCTOR'S DEGREE**

There is no second doctor's degree.

### **6. RECOGNITION**

The recognition of foreign doctoral degrees falls under the responsibility of the Commission for Scientific Qualifications. Doctoral degrees obtained in the United States of America and in western European countries can be recognized automatically.

# AUSTRIA

## 1. GENERAL INFORMATION

Traditionally, university studies in Austria have led to a doctoral degree or to a state examination, with the exception of course programmes at technical universities and at universities of economics. Here, intermediate degrees (Diplomas) did exist. As a result of the reform of university studies, all course programmes - with the exception of medicine - lead to a Master's degree. Doctoral studies are now classed as postgraduate studies.

A doctorate is defined as a programme of postgraduate studies with a nominal duration of from two to four semesters (one or two years) which follows a diploma course (master's degree) programme. The only exception is the course programme in medicine, in which there is no division into a diploma course programme and doctoral study, but rather a three-stage doctoral study programme which leads directly to a doctor's degree in medicine.

There are no first and second doctoral degrees; there is only one doctoral programme which leads to a doctoral degree. The nominal duration of doctoral studies in order to obtain the doctoral degree is shown in the Table below.

Field of study	Number of years elapsed since completion of secondary education				
	4	5	6	7	8
1. Education		M		D	
2. Humanities <sup>1</sup>	M		D		
3. Religion, theology		M		D	
4. Fine arts, applied arts, architecture <sup>2</sup>	M	-----			M
5. Law	M	D			
6. Economics and social sciences	M	D			
7. Administration, business, commerce	M	D			
8. Exact and natural sciences <sup>3</sup>		M		D	
9. Engineering, technology	M		D		
10. Medical sciences <sup>4</sup>			D		
11. Agriculture, forestry, fisheries		M		D	

M - Master's degree;

D - Doctor's degree.

### Notes:

1. Psychology: M = 5, D = 7;
2. Different duration between 4 and 8 years (secondary school leaving examination not obligatory, no doctorate); architecture: M = 5, D = 7;
3. Exceptions: astronomy, meteorology and geophysics M = 4, D = 6; geography, pharmacy M = 4,5, D = 6,5;
4. Veterinary medicine M = 5, D = 6,5. In medical sciences no master's degree is awarded.

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### 2. INSTITUTIONAL FRAMEWORK

The higher education system as a whole, and the doctorate in particular, are governed by:

- the «General University Studies Act» (AHStG) which deals with the general legal and organizational principles of studies and examinations;
- a special study law (besonderes Studiengesetz) which regulates programmes and the minimum duration of the course programmes and the examinations;
- a ministerial decree on the course scheme (Studienordnung) specifying the universities which offer the courses, the number of hours of study, and the methods of examination.

There is no specialised body in the country which carries out management or administration functions for doctoral studies. The universities themselves are authorized to set up doctoral studies and to confer the doctoral degree.

The Ministry of Science and Research conducts a planning procedure regarding the specialities covered by doctoral studies; however, the number of candidates for enrolment in doctoral studies is not planned.

Doctoral studies can be financed from different sources: by the state, by university or federal grants, by doctoral students themselves, and by part-time employment as teaching assistants.

The route leading to the doctor's degree is described in Section 3.

### 3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE

#### 3.1. Admission

To be admitted to doctoral studies, a candidate must pass the final examination for a master's degree - or an engineering degree - and, thereby, be awarded the diploma of Magister or of Diplom in the same or in a closely related discipline. No other restrictions for admission to doctoral studies exist, except the quota for foreign students. There is no selection procedure for candidates. The registration of applicants is conducted by each university.

#### 3.2. Organization of Doctoral Studies

Doctoral studies are full-time with a nominal duration of between two (economics, social sciences, and law) and four semesters for postgraduate doctoral studies (in other fields). No duration of study is fixed for engineering, mining, and agriculture.

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A supervisor for each doctoral student is appointed, selected from among ordinary or extraordinary professors or holding Habilitation (*venia docendi*). The number of postgraduate students which a supervisor can supervise at a time is not fixed. For this kind of work, a supervisor can earn additional salary, fulfill his or her own teaching and research assignments, and gain prestige among colleagues.

There is no individual planning of doctoral studies. A doctoral student can have meetings with his or her supervisor as many times as needed. He or she can also receive assistance from other members of the department as well as from academics from other countries. Joint supervision and single award are permitted as a mode of interuniversity co-operation in the preparation and the award of doctorates .

During the period of doctoral studies, a student can interrupt and resume studies, do part-time teaching and research, carry out part of his or her required research in other universities, and attend international workshops or courses as part of his or her training.

The award of a doctoral degree carries no entitlement to future employment either in higher education and research or in industry. A doctoral degree is usually one of the requirements for being appointed to a lectureship at a university.

### **3.3. Programme**

The programme of doctoral studies is composed of postgraduate and specialized courses which are distinct from Master's degree courses and research. Courses which are to be taken by the doctoral student consist of lectures and seminars. The distribution of the total amount of course time is as follows: around sixty percent for advanced courses in the field; about thirty percent for auxiliary subjects, and approximately ten percent for research methodology.

After completion of course work, each student must take a final examination, which is composed of several tests covering one or two subjects related to the theme of the dissertation. The final examination is oral and is administered by an examination board or by individual examiners. The assessment of examination performances is rated by grades, ranging from 1 (very good) to 5 (failure). Students are permitted to resit failed examinations twice.

### **3.4. Dissertation**

In the course of doctoral studies, a student carries out the necessary research and writes a doctoral thesis which is expected to contribute to scientific development through original research. The subject of a dissertation must be approved by the supervisor or by the department if the candidate cannot find a supervisor. A



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dissertation is presented in the form of a monograph in the national or in a foreign language if the supervisor and the other members of the board agree.

There is no defense of the dissertation. There is no need to present an abstract of the dissertation.

In order for the dissertation to be accepted, a board is appointed by the department for each dissertation, usually consisting of two ordinary or extraordinary professors or holders of the Habilitation (*venia docendi*) from the department or the university. An academic from another country can sit on the board, but such cases are rare.

The titles of dissertations are published in a bibliographical listing by the Austrian National Library. A copy of each dissertation must be deposited in the library of the awarding institution and in the national library. Further copies of dissertations are not available in the form of xerox or microfilm.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctor's degree.

### **5. THE SECOND DOCTOR'S DEGREE**

There is no second doctor's degree. The so-called Habilitation (*venia docendi*) is not an academic degree but a special university qualification which gives the right to teach in a given field.

### **6. RECOGNITION**

Foreign doctoral degrees can be recognized by the state or by universities. Recognition by the state is carried out through bilateral treaties, usually concerning only the academic effects (*effectus academicus*) of university degrees. If there exists no bilateral treaty or if recognition is desired for the professional sphere (*effectus civilis*), the doctorate has to be recognized by the university (*Nostrifizierung*).

The criteria for the recognition of foreign doctoral degrees are elaborated as regulations.

Doctoral degrees awarded in Bulgaria and Hungary are automatically recognized if the Master's degree was awarded in Austria.

# BELARUS

## 1. GENERAL INFORMATION

The doctorate in Belarus is regarded as a stage of postgraduate education. It consists of two academic degrees of doctoral type:

- the Candidate of Sciences (Kandidat Nauk) - the first doctorate, and - the Doctor of Sciences (Doktor Nauk) - the second and highest doctorate.

Doctoral degrees of both types are granted in all the major fields of the sciences, the humanities, and the arts by the leading higher education and academic research institutions. Doctoral programmes are aimed at providing advanced education and training of personnel mainly for higher education and research.

The programmes leading to the Candidate of Sciences degree require at least three years of postgraduate study. The Doctor of Sciences degree programmes formally require an additional three years of study following award of the Candidate of Sciences degree, but in practice much more time is required to earn the Doctor of Sciences degree.

The Table below represents the academic degree system in Belarus higher education.

Field of study	Number of years elapsed since completion of secondary education						
	5	6	7	8	9	10	11 ...
1. Education	Di			D1			D2
2. Humanities	Di			D1			D2
3. Religion, theology	Di			D1			D2
4. Fine arts, applied arts, architecture	Di			D1			D2
5. Law	Di			D1			D2
6. Economics and social sciences	Di			D1			D2
7. Administration, business, commerce	Di			D1			D2
8. Exact and natural sciences	Di			D1			D2
9. Engineering, technology	Di			D1			D2
10. Medical sciences		Di			D1		D2
11. Agriculture, forestry, fisheries	Di			D1			D2

- Di - Diploma of Higher Education;  
 D1 - Candidate of Sciences degree;  
 D2 - Doctor of Sciences degree.

## 2. INSTITUTIONAL FRAMEWORK

Doctoral studies are regulated by special regulations enforced by the Ministry of Education of Belarus. These regulations set the standards and requirements to be

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met by doctoral programmes and studies as well as by doctoral dissertations and examinations. They also specify the procedure for the defense of dissertations and the confirmation of degrees.

The above-mentioned regulations also prescribe the terms of eligibility for institutions to conduct doctoral study programmes. They stipulate that the right to launch and to conduct such programmes can only be granted to higher education and academic research institutions of recognized scholarly level. The main criteria for recognition are the following:

- considerable scholarly and scientific achievement on the part of the institution;
- a substantial number of degree holders on the staff of the institution, including those of wide renown;
- the availability of infrastructure and of adequate research equipment for carrying out advanced research and study.

The right to conduct doctoral study programmes is granted to higher education institutions by the Ministry of Education and to academic research institutions by the National Academy of Sciences.

The same bodies, the Ministry of Education and the National Academy of Sciences, undertake the annual and long-term planning of doctoral studies at the national level on the basis of plans presented by all the institutions engaged in doctoral education. In the process of planning, an optimum correlation is sought between the number of students applying for the chosen specialities and the future demand for these specialities. Account is taken of the availability of highly skilled supervisors for the enrolled candidates, as well as of the library resources and the equipment needed to carry out research.

The financing of doctoral studies comes from the state budget. The part-time employment of candidate students as teaching or research assistants is also possible.

The two doctoral degrees can be earned either by enrolling in doctoral study programmes (aspirantura, for the Candidate of Sciences degree and doctorantura, for the Doctor of Sciences degree) or through independent study and research.

### **3. THE MAIN ROUTE LEADING TO THE DOCTOR'S DEGREE**

The main route leading to the Candidate of Sciences degree is award of a postgraduate fellowship called aspirantura. An aspirantura aims at imparting a more profound, individualized, theoretical, and professional education as well as social education, the training of teaching and research staff, and mastery of methods and means of scientific study to provide a student with skills to carry out independent research. A postgraduate student is known as an aspirant.

### **3.1. Admission**

Since most aspirantura programmes have more applicants than they can accept, institutions in which aspirantura is offered set quotas limiting the numbers of enrollments. Admission is competitive and is offered only to the applicants judged to be best prepared and whose backgrounds and interests are best suited to the selected programmes.

The general prerequisites for admission to aspirantura are completion of a full course of study at an institution of higher education, creative thinking shown in practical work or study, and an age-limit of up to thirty-five years for full-time and up to forty-five years for part-time students, respectively.

Employed specialists with no less than a two-year work record have the right of admission to aspirantura, however, the graduates of full-time undergraduate course programmes who are recommended by the Academic Councils of their institutes for continuation of their research projects (mostly in theoretical problems that do not require practical experience) can also apply for aspirantura.

Admission to entrance examinations is based on a proposed dissertation synopsis, research and development outcomes submitted by each applicant, and on the results of preliminary discussions of the research topic with a possible supervisor. Applicants take competitive entrance examinations in their subjects of specialization, in one foreign language, and in philosophy. Enrollment is based on success in entrance examinations and on an evaluation by the prospective supervisor.

Admission commissions recommend that the winners of competitions be registered as aspirants. Finally, the commission decision becomes valid after the rector of a higher education institution or the director of a research institute approves it and issues the corresponding decree.

### **3.2. Organization of Doctoral Studies**

The aspirantura involves both full-time and part-time study the terms of which must not exceed three and four years, respectively.

A Doctor of Sciences or a professor specializing in the subject area is appointed as the supervisor of each aspirant as soon as the latter joins the aspirantura. The supervisor acts as tutor to an aspirant, supervises the completion of the individual plan of study, and bears responsibility for the adequate scientific level of the thesis. A supervisor can have up to five postgraduate students at one time. This kind of work can be additionally remunerated or be considered a part of the normal teaching and research assignments of the supervisor.

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The Academic Council of the institution must approve the subject of the doctoral thesis of every newly enrolled aspirant within 3 months following his or her enrollment as well as the latter's individual plan for the whole course of study. The Academic Council supervises the work of aspirants by regularly reviewing the reports of supervisors and the heads of chairs, departments, sectors, and laboratories with regard to the results of their work with aspirants. An aspirant gives regular progress reports on his or her individual plan at the meetings of the chair, department, etc., and is annually reviewed by his or her supervisor. In case a student fails to fulfill his or her individual plan of study, he or she is expelled.

A doctoral student can have meetings with his or her supervisor as many times as needed. He or she can also receive help from other staff members of the institution as well as from academics coming from other countries, but the latter case is rare.

During the period of postgraduate studies, students can interrupt and resume studies, carry out parts of their required research in other institutions, attend international workshops or courses as part of their training, and do part-time teaching and research. The latter is remunerated at a rate up to half the salary corresponding to a research or a teaching post.

Full-time postgraduate students are paid a monthly state grant during the whole three-year course of study, it being included in their general record of scientific and instructional work. Part-time postgraduate study is also encouraged. Part-time students obtain annually a fully paid additional period of leave.

Having completed aspirantura, graduates are entitled to future employment in higher education or research. They have an advantage when applying for a teaching post at a higher education institution or for a research post at a research institution. The award of the Candidate of Sciences degree leads to a salary increase and to a job promotion at higher education or research institutions. Possession of the Candidate of Sciences degree is an advantage when applying for an associate professorship (dot-senf).

### **3.3. Programme**

Doctoral programmes consist of in-depth studies in the chosen field of specialization and a thorough investigation of the chosen topic, the analysis and results of which are presented in the form of a written thesis. Each programme includes postgraduate courses and research on the subject of the doctoral thesis.

The course programmes consist of lectures, seminars, and workshops. They are devoted to advanced studies on the theory and history of the chosen discipline and on the theory and applications of the subject of specialization. In addition, courses in research methodology, psychology, didactics and teaching methods, informatics, a foreign language, economics and/or other courses as needed, as

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well as a training course in university teaching and instruction are also taken. Upon completion of the courses, aspirants take profile examinations for each course. Profile courses and examinations are specified for every speciality by the Academic Council of the institution which offers aspirantura courses. The Council also determines the proportion of time to be devoted to each of the courses in the total amount of time available.

In the Belarus aspirantura system, the allocation of time is usually the following:

- advanced courses in the field: 50% - 60%
- auxiliary (related) subjects: 10% - 20%
- research methodology: 20% - 30%
- a foreign language: 10%.

In addition, during their first two years of study, aspirants must pass qualifying (Candidate) examinations in their subjects of specialization, in a foreign language, and in philosophy.

### **3.4. Dissertation**

The submission and defense of a dissertation is the major requirement for the award of the Candidate of Sciences degree.

The final choice of the dissertation topic involves the student and his or her supervisor. It is the object of a preliminary discussion during the application procedure. After enrollment, the subject is analyzed and, assuming that it is topical and corresponds to the main scientific orientation of the institution as well as to the scope of the interests and expertise of the supervisor, it is approved by the Academic Council of the institution.

The dissertation must reflect research on a disciplinary or interdisciplinary theoretical or applied problem, the results of which will constitute an original contribution to knowledge in the discipline or disciplines concerned. Doctoral research must demonstrate the ability of the candidate to identify a new intellectual problem, to apply research methods and techniques competently, and to achieve tangible results and convincing conclusions independently.

The dissertation can be submitted in the form of a monograph, or it can be offered as a series of contributions (several published articles or a book) the research for which meets the general requirements for the dissertation. In either case, the dissertation should be written in the national language.

The public defense of the dissertation is compulsory. The dissertation, along with the preliminary expertise of the faculty of the institution in which the research was undertaken, are submitted to the Specialized Council. The author's publications on the topic of the dissertation, certificates of inventions and

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discoveries, patents, new materials, algorithms, etc., should accompany the dissertation .

An abstract of the dissertation is to be published before the defense. It should summarize the basic original idea and the results of the research and their interpretation in view of their practical application. No later than one month before the defense, the abstract should be distributed to the members of the Specialized Council, to several educational and research institutions, and to other organizations engaged in the field for their judgments with regard to the relevance and value of the work accomplished. Their evaluations are to be submitted to the Specialized Council.

The defense procedure is public and open to anyone who wishes to attend it. The Specialized Council hears the defense. The Council is appointed by the Higher Attestation Commission of the Government of Belarus for each particular field of knowledge in the leading academic and research institutions offering aspirantura programmes. Specialized Councils are standing bodies having five-year terms. They are composed of twenty to twenty-five staff members belonging to the respective institution or to an outside one who are acknowledged experts in the given fields as well as being holders of the Doctor of Sciences or the Candidate of Sciences degrees.

For every candidate, the Council appoints two official opponents from outside the awarding institution, the mission of which is to submit to the Council a review and evaluation of the dissertation from the point of view of its relevance and correspondence to the required standards. The official opponents who participate in the defense bear responsibility for the objective character and unbiased approach to the dissertation and its discussion during the defense.

The results of the defense, along with the evaluation of independent experts and opponents, shape the opinions of the members of the Specialized Council who, by secret ballot, decide whether or not the dissertation meets the requirements for the Candidate dissertation and, consequently, whether or not the applicant can be granted the Candidate of Sciences degree. A positive decision requires that at least two-thirds of the Council members vote in favour of the candidate. In case of failure, the defense can be repeated in no less than a year.

A copy of the dissertation is deposited in the library of the awarding institution, in the national library, and in the national data bank. Further copies of the dissertation are available in Xerox and microfilm forms.

#### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

Another route leading to the Candidate of Sciences degree is that of the outside *aspirantura*. An outside applicant is associated with a higher education establishment or research institution for tutoring in specialized subjects, in a

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foreign language, and in philosophy according to the given postgraduate programme, and for taking qualifying examinations and preparing a dissertation.

A supervisor for each applicant is appointed by the institution with which he or she is associated, and possibilities for using libraries, laboratories, and other facilities are made available. Doctoral studies are financed either by the applicant's employers (from the budget for personnel training) or by the applicants themselves. This route must fully conform to the general rules for the taking of Candidate examinations and the defense of Candidate dissertations.

### **5. THE SECOND DOCTOR'S DEGREE**

The second and highest academic degree awarded in Belarus is the Doctor of Sciences degree. It is awarded in most fields of knowledge upon the successful defense of a dissertation or its equivalent.

Doctoral research and dissertations can be undertaken either in the course of studies within full-time doctorantura or independently. In the former case, upon the decision of the Academic Council of the home higher education or research institution, a candidate may be granted a paid sabbatical (up to 6 months) or research missions to other leading institutions in the field in the home country or abroad (up to 10 months). A candidate occupying a teaching post can be transferred temporarily (up to 2 years) to a researcher's post.

Doctorantura is only set up in the leading educational or research institutions of the country, those having advanced research facilities and outstanding scientists of wide renown on their staffs.

Senior level doctoral programmes are aimed at the development of highly skilled scientific and academic staff in the broader fields of knowledge in the arts the sciences, and technology.

Only Candidate of Sciences degree holders engaged in education or research and occupying lecturer or senior researcher posts can be admitted to doctorantura. They must have proved that they are capable of conducting serious individual research and of writing a dissertation leading to the Doctor of Sciences degree. An applicant to the degree programme is also required to present publications in his or her special field which should correspond to the required scientific level, a comprehensive outline of his or her doctoral dissertation, and recommendations from the employing institution with regard to his or her research activities and scientific potential.

Admission to doctorantura is competitive. Decisions are reached by the Academic Council of the institution.



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The Doctor of Sciences study programme consists only of research. A scientific consultant, a Doctor of Sciences degree holder, who is a leading expert in the field, advises doctoral students (doctorants) on their dissertation work.

The requirements for the Doctor of Sciences dissertation are higher than those for the Candidate of Sciences thesis. The Doctor of Sciences dissertation is expected to make an essential contribution to the solution of a fundamental scientific, social, economic, cultural, or technological problem; or it should evoke and present scientifically proved fundamental ideas in the sciences, arts, and technology representing a considerable contribution to progress in the fields of research concerned.

Doctorants present progress reports on their work each year to the Academic Council of their institutions for assessment and approval for further studies in doctorantura.

By the end of the course of studies, a doctorant must have completed his or her dissertation, and it must have been the object of a preliminary evaluation by the institution concerned.

The formalities with regard to the dissertation document, the publicity to be given to it, and the defense procedure are the same as those for the Candidate of Sciences degree.

The decision of the Specialized Council for the defense of dissertations leading to the Doctor of Sciences degree is reviewed by the Higher Attestation Commission as either approved or disapproved. Then, if the decision is favorable, the doctorant is granted his or her diploma and the title of Doctor of Sciences.

During the period of studies, doctorants obtain a state grant. Upon completion of his or her studies, a doctorant returns to the same position at the same institution in which he or she has been working.

The second route for earning the Doctor of Sciences degree is the preparation of a dissertation individually by combining work and research in the field without benefiting from the advantages and privileges provided by the route described above. In this case, there is no age limit for the defense of a dissertation leading to the Doctor of Sciences degree.

The degree of Doctor of Sciences is a prerequisite for appointment to a professorship in a higher education institution.

## **6. RECOGNITION**

The Republic of Belarus recognizes scientific degrees awarded in the former Soviet Union and in certain other states. In order for a doctoral degree earned

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abroad to be recognized in Belarus, its holder or his or her employer must apply to the Higher Attestation Commission. If there is no recognition agreement between Belarus and the country which awarded the doctoral degree, the Commission requests the text of the dissertation and certain additional materials.

In most cases, applicants for employment in Belarus are not required to hold the doctoral degree. Exceptionally, however, higher education and research institutions may require that applicants for certain posts hold a doctoral degree.

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## The Flemish Community

### 1. GENERAL INFORMATION

In Flanders, the doctorate is regarded as a stage of postgraduate studies (third cycle of education). Doctoral studies constitute advanced postgraduate programmes which require at least two years of study after a second cycle academic diploma (basic diploma) and lead to the doctoraat degree. In practice, the earning of a doctor's degree requires a much longer period. The doctorate may be awarded in all the faculties offering a complete cycle of studies.

The system of academic degrees in higher education is presented in the Table below.

Field of study	Number of years in the cycles		
	I cycle	II cycle	III cycle
1. Philosophy and ethics	2	2	2
2. Theology, Roman catholic religious studies, and canon law	2	2	2
3. Language and literature	2	2	2
4. History	2	2	2
5. Art history and archaeology	2	2	2
6. Law, notarial and criminal law	2	3	2
7. Psychology and educational sciences	2	3	2
8. Economics and applied economics	2	2	2
9. Political and social sciences	2	2	2
10. Social health sciences	2	2	2
11. Physical education and physiotherapy	2	2	2
12. Science	2	2	2
13. Engineering	2	3	2
14. Applied biological sciences	2	3	2
15. Medical sciences	3	4	2
16. Dentistry, veterinary studies, and pharmacy	2	3	2

#### Notes:

1. Higher education in Flanders can be divided into cycles. The first cycle covers a period of two to three years (depending on the field of study) and leads to the first university degree, the kandidaat. The second cycle, which lasts two to four years, following award of the kandidaat, leads to a final full diploma which is a qualification for either employment or research (licentiaat or professional qualification of ingenieur, apotheker, etc.). The third cycle corresponds to a second or third phase of specialization or to an initiation to research which leads to the doctoraat
2. At the same time or after the licentiaat, the geaggregeerde voor het onderwijs can be earned. This qualification entitles the holder to teach various subjects in upper-secondary education.
3. In medicine, the doctoraat is a university qualification granted after four years of study following three years of study for the kandidaat in medical sciences. In veterinary medicine, this qualification

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is granted after three years of study following an initial three years of study in veterinary science and one year of candidature in veterinary medicine. In both cases, no thesis is required.

4. Starting as of the 1994-1995 academic year, the final academic degree for a physician-medical practitioner is called «arts» instead of «doctor in medical sciences». Since the 1993-1994 academic year, the second cycle of academic training in veterinary medicine is concluded with the final degree of dierenarts. In accordance with these changes, advanced academic education can only be concluded with the academic degree of doctor after the defense of a dissertation.

### **2. INSTITUTIONAL FRAMEWORK**

In Flanders, higher education, including doctoral studies, is regulated by the Flemish Government Act of 12 June 1991 on Universities in the Flemish community. It divides academic education into academic training programmes (basic training), postgraduate training programmes, doctoral training programmes, and postacademic training. The Act lays down the general principles of doctoral studies and defines a doctoral training programme as the work required for the preparation of a senior (doctoral) thesis.

There is no national body which manages or administers doctoral studies. Universities themselves are authorized to set up doctoral studies and to confer the doctoral degree. The right to set up doctoral studies is granted by the Flemish community. In addition to universities, the Examination Board of the Flemish community for University Education has the right to set up doctoral studies and to confer the doctorate. The universities enact the specific procedures of doctoral studies, proceeding from their particular conditions, through the various regulations concerning the doctorate as laid down and observed by their faculties. The latter include, among other things, the procedures to be observed within the faculties and the composition of examination boards.

The financing of doctoral studies comes mainly from the state through intermediate granting bodies, but not in a direct way. Financing by enterprises and by doctoral students themselves is also possible. University grants, loans, and part-time employment as research assistants are also possible. Doctoral study funding is carried out in two ways: on an individual basis and through project financing. In the first case, doctoral studies are financed either by the university itself by means of research assistant assignments or by institutions and agencies outside the university. The National Scientific Research Fund, the Institute for the Encouragement of Scientific Research in Industry and Agriculture, the Interuniversity Board for Doctoral Studies in the Field of Management Sciences, and other scientific organizations are the funding agencies. As to the second way, projects can be financed either by the university itself through special research funds and concerted research actions or by ministries or other national or Flemish authorities, by industry, by associated funds, and by the European Union.

### **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

The doctor's degree is accessible to holders of a second cycle academic diploma (basic diploma) which enables candidates to enroll in doctoral training programmes and, by decision of the university board, to defend a thesis. Other acceptable prior degrees are a graduate engineer-polytechnician diploma, a licentiate diploma obtained at the Royal Military Academy, a licentiate diploma in commercial sciences, and a commercial engineer's diploma delivered by a long-term higher education institution (HOLT)

The university determines which diplomas give access to which doctors' degrees. The various doctors' degrees are directed mainly at students holding a diploma in the corresponding academic training. Those who hold other diplomas considered to be equivalent (e.g., a foreign diploma) or diplomas in another field can also be admitted to doctoral training after individual approval by the given faculty.

The university board determines the equivalence to be awarded to the terminal diploma of a foreign university or other institution of higher education. It may require the holder of such a diploma to give proof of his or her ability to write a senior thesis or to pass an examination.

Since the total number of doctoral grants is limited, admission to doctoral studies is competitive. The selection procedure is based on the master's thesis, average grades in previous studies, interviews, and recommendations. The university board may make enrollment in a doctoral training programme subject to success on an entrance examination. Foreign students and students from long-term higher education institutions (HOLT) are usually required to take and pass entrance examinations in their fields of specialization.

#### **3.2. Organization of Doctoral Studies**

Doctoral studies can be both full-time and part-time. The doctor's degree can be earned in two years at the earliest after graduation from a higher education institution (basic diploma). In practical terms, a doctoral dissertation is rarely finished in two years. A period of four years for exact sciences and of six years for human sciences is a more realistic goal.

Each doctoral student has a specially appointed supervisor (promote an academic staff member. The number of postgraduate students a supervisor may have at a time is not fixed; it depends on the supervisor. Supervisory activities do not entail additional remuneration. They are considered to be part of the teaching and research assignments of the promotor.

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A doctoral student can have meetings with his or her supervisor as many times as needed. Students may also receive advisory help from other academics in and outside the country. The following modes of interuniversity co-operation in the preparation and award of the doctorate are permitted: joint supervision and award; joint supervision, single award; joint supervision, double award; and joint supervision, single award with mention of co-operation on the certificate.

Doctoral students design their individual plans of studies. The progress made is monitored by the supervisor in informal discussions.

In the course of their doctoral studies, students may interrupt and resume studies, do part-time paid teaching and research, carry out part of their required research in other institutions, and attend international workshops or courses as part of their training.

There are two models of organization of doctoral studies. The first one, currently the dominant model, can be defined as the learning by doing model. According to it, the researcher learns his or her profession by practicing under the watchful eye of his or her promotor. The relationship between the student and his or her supervisor, which is of a master-craftsman nature, is characterized by a certain distance and formality. In this type of training, the influence of the promotor is of overriding importance. This influence is not restricted to defining the chances of the individual student; it also affects the course of the doctoral training and its results, as this person has a huge influence in appraisal committees. De facto, this situation implies that a conflict with the promotor may also lead to the abandonment of the dissertation project.

Another alternative model was introduced by the University of Antwerp during the 1992-1993 academic year. In line with this model, the doctoral training programme includes a series of structured educational activities. Each student designs an individualized programme having a value of sixty credits: twenty credits for general subjects and forty for specific subjects. Each university offers a package of general and specific subjects. Students make their choices from that offer and complete their programmes with seminars, workshops, summer courses, and the like at foreign universities. In addition to general courses, the package offered by the university contains science, philosophy, and ethics courses; informatics courses; scientific reporting courses in English and Dutch; and courses in social skills and management.

The award of the doctor's degree is not a sufficient but a necessary step to further employment in higher education or research. First and foremost, a doctoral thesis is a condition for a career at the level of autonomous assisting academic personnel in universities. As budgets are restricted, only very few people are able to obtain permanent employment as academic staff members. The post of professor in long-term higher education institutions requires a doctor's degree. Also, for certain official functions, a doctor's degree is required (i.e., for the so-called national scientific institutions and the museums of the Flemish Community). For other official

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functions, holding a doctor's degree may mean that one is hired and paid according to a higher level on the salary scale. Primarily in the exact sciences segment of the private sector, a doctor's degree is a strong argument for the assignment of research functions.

### **3.3. Programme**

Although earning a doctorate primarily involves the undertaking of scientific research and the writing of a doctoral dissertation, it may also include prior enrollment in courses and seminars devoted to theory. In some doctoral programmes, the scope of training is explicitly determined. In most cases, it has been considered normal for students to attend specialized courses or seminars without formal rules regarding this matter. As a consequence of the new Act, universities are now able to organize doctoral training programmes which are formally recognized as such, something which is for the benefit of students. However, the Act does not impose enrollment in such a training programme as a condition for the award of the doctorate.

The programme in question contains no fewer than 1,500 and no more than 1,800 periods of education or other study activities. It is determined by the board in charge of the university and can be spread over the period used for preparing the senior thesis. Teaching, research, or other scientific activities performed at other universities, academic education institutions, or scientific research at home or abroad may be part of this training programme. No course examinations are required. After completion of a doctoral training programme, a certificate is awarded.

### **3.4. Dissertation**

The defense of the dissertation is the final stage of the doctoral training programme. The subject of the dissertation must be approved by the supervisor, by the department, and by the university.

The doctoral thesis is based on research which the student has undertaken. It is expected to be an original scholarly work which makes a contribution to the selected field of knowledge. The dissertation should also reveal the student's knowledge of research methodology and of his or her ability to undertake individual research.

The dissertation is usually presented in the form of a monograph. Certain regulations pertaining to doctoral studies prescribe that the defense of a series of publications on an approved subject may be substituted for the defense of a thesis. Normally Dutch is the language in which the thesis is written and in which the defense takes place. Exceptions can be made for an acceptable reason.

In addition to the doctoral thesis, an abstract of it must also be submitted. The abstract is disseminated to concerned institutions in Belgium and abroad. Moreover some faculties have ruled that candidates must also write and defend one or more

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complementary theses bearing no relationship to the subject of the principal doctoral thesis.

Doctoral candidates are not required to submit additional publications. However, while preparing their doctoral theses, students are required to distinguish themselves. Sometimes, the possibility of permitting persons who distinguished themselves through scientific publication to defend one or more of these publications as a doctoral thesis is permitted.

The defense of a dissertation is advertised in the given department, in the university, and in the other institutions concerned. The defense, which is public and open to anybody who wishes to attend it, takes place in front of an examination board which is designated by the university for each dissertation. Each board is composed of seven persons, professors or experts in the given field. All members of the board are from the university. An academic from another country may sit on the board, but this practice is rare.

If the thesis is approved by the examination board, the doctor's degree is granted. In case of failure, the student may revise his or her thesis and repeat the defense.

A copy of the dissertation must be deposited in the library of the awarding institution, in the national library, and in the national data bank. Further copies of the dissertation are made available upon request in Xerox and in microfilm Worm. The titles of dissertations (along with summaries or comments) are published in national scientific publications.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctor's degree.

### **5. THE SECOND DOCTOR'S DEGREE**

There is no second doctor's degree.

### **6. RECOGNITION**

The evaluation of foreign diplomas for the purpose of admission to university level studies is undertaken by the universities themselves. The universities, as autonomous entities, have the right of final decision as to whether or not foreign diplomas meet the entrance requirements stipulated in the University Decree of 12 June 1991.

Persons holding foreign diplomas and wishing to practice a profession in the public sector or a law-regulated profession must gain an official equivalence



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declaration. The equivalence-declaration is granted by the Flemish government. The procedure implies an advisory stage which is carried out by the universities.

Holders of foreign diplomas who intend to practice a profession in the private sector do not need an official equivalence-declaration. Because of certain European Union directives, European Union citizens holding European diplomas and wishing to practice a profession in Flanders are likewise not required to obtain official equivalence declarations.

### The French Community

#### 1. GENERAL INFORMATION

In the French Community of Belgium, the doctorate and the agrégation de l'enseignement supérieur (AES) are the highest academic degrees awarded. The diploma of docteur is required for teaching in universities. The doctorate can be legally taken one or two years at the earliest after the award of a licence diploma or of its equivalent (ingénieur, docteur en médecine, pharmacien). In practice, however, this degree requires from four to six and sometimes even more years of study.

The way one earns the AES depends upon the field of study (see the Table below which illustrates the system of academic degrees in the French Community).

Field of study	Number of years elapsed since completion of secondary education								
	2	3	4	5	6	7 ...	... varied duration		
1. Education	s	C		L				D	A
2. Humanities	ls	C		L				D	A
3. Fine arts	s	C		L				D	A
4. Law	ls	C			L			D	A
5. Economics and social sciences	s	C		L				D	A
6. Administration, business, commerce	s	C			I, L			D	A
7. Exact and natural sciences	ls	C		L				D	A
8. Engineering	ls	C			I			D/A1	A2
9. Medical sciences									
medicine	ls		C				Dst	D/A1	A2
dentistry	ls	C			L			D/A1	A2
pharmacy	ls	C			Ph			D/A1	A2
veterinary medicine	ls		C			Dst		D/A1	A2
10. Agriculture	ls	C			L			D/A1	A2

- I - fields of study in which legal degrees are awarded;
- s - fields of study in which scientific degrees are awarded;
- C - candidate (candidat);
- L - license (licence);
- I - engineer (ingénieur);
- Ph - pharmacist (pharmacien);
- Dst - doctor (docteur), professional degree not requiring a thesis;

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- D - doctoral degree (doctoral);
- A1 - agrégation de l'enseignement supérieur. In these fields of study, holders of the doctorat are not legally required to obtain the AES diploma, but it can be required by universities;
- A - agrégation de l'enseignement supérieur, awarded only to the holders of the doctoral degree;
- A2 - agrégation de l'enseignement supérieur, awarded only to holders of the doctoral degree.

### Notes:

**Legal degrees** are university degrees sanctioning studies the admission conditions, programmes, and duration of which are set by law. The following degrees belong to this category: candidat, licence, agrégation de l'enseignement supérieur, doctorat in philosophy and letters; law and the profession of notary; sciences; medicine; veterinary medicine; dental surgery; pharmacy; civil engineering; agronomy.

**Scientific degrees** are degrees sanctioning studies the admission conditions, programmes, and duration of which are established by universities, without legal regulation. These university studies have been developed outside or within the traditional faculties in order to meet new needs, which were not met by the cycles of studies leading to legal university degrees (economics, social sciences, political sciences, computer science, psychology, and physical education). The studies are organized according to the traditional pattern (candidature, licence, agrégation, doctorat). This distinction between the two types of university grades will be abolished soon in the French-speaking community. In the Flemish-speaking community it was abolished by the decree of 12 June 1991 on universities. All university course programmes will be sanctioned by a single type of academic degree.

## 2. INSTITUTIONAL FRAMEWORK

In the French Community, the legal degrees, including the doctorate, are regulated by the laws on the award of academic degrees which lay down the general principles of doctoral studies. The universities specify their requirements for doctoral studies basing them on their particular conditions.

No national body exists to carry out the management and the administrative functions of doctoral studies. Universities themselves are authorized to set up doctoral studies and to confer doctoral degrees. There is prior planning neither as to the number of candidates nor as to specialities.

Major financial sources for doctoral studies come from the state via funding bodies like the FNRS (Fonds National de la Recherche Scientifique), and others. Financing by enterprises and by the doctoral students themselves is also possible. University grants and part-time employment as teaching or research assistants are also practiced.

## 3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE

### 3.1. Admission

In order to be admitted to doctoral studies, applicants must hold a licence diploma or its equivalent. There are no restrictions regarding the age of doctoral applicants, numerus clausus, national minorities, or quotas for foreign students.

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However, the number of doctoral students which a university or a department can accept is determined by the available financial resources.

If the number of applicants exceeds the available financial resources, a selection procedure must take place. The selection of applicants is based on average grades in previous studies, on personal research, and on an interview. No entrance examinations are required.

### **3.2. Organization of Doctoral Studies**

Doctoral studies can be both full-time and part-time.

Each doctoral student has a specially appointed supervisor who monitors and guides his or her research and studies. The supervisor must be a doctoral degree holder. The number of students which the supervisor may have at a time is not fixed and depends on the given university, department, and field of study. The supervisors of doctoral students are not entitled to additional remuneration. Such duties are considered to be prestigious and to constitute a part of the teaching and research load of the supervisor.

The frequency of the meetings of a student with his or her supervisor is not limited and depends on the needs of the student. Students may also receive advisory assistance from other members of the department and university or from academics outside the country. Joint supervision and single award with mention of co-operation on the certificate is permitted as a mode of interuniversity cooperation in the preparation and the award of the doctorate.

During doctoral studies, students may engage in part-time paid teaching and research, carry out part of their required research in other institutions, and attend international workshops and courses as part of their training. Students are not permitted to interrupt and to resume their studies.

Doctoral students work according to individual plans which they design with the help of their supervisors. The progress made is discussed with the supervisor, in seminars, and by faculty commissions. Information about the progress made is also reported annually to the respective funding body.

The award of the doctorate degree creates for its holder an entitlement to further employment in higher education and in research. For those persons who are already in employment, the award of the doctorate can lead to a job promotion or a salary increase.

### **3.3. Programme**

The programme of doctoral studies, depending on the university, department, and field of study, can consist of postgraduate courses and research, or of research only. When the programme includes postgraduate courses, students attend lectures and seminars and meet with supervisors. Upon completion of courses, students must take and pass separate oral examinations for each course.

### **3.4. Dissertation**

The defense of the dissertation is the final stage of doctoral studies. The subject of the dissertation must be approved by the supervisor and, in some universities, by the department.

The dissertation must be a scholarly work which makes a contribution to knowledge in the relevant field. It must be based on original research and have a scientific outcome which demonstrates the ability of the author to conduct independent research as well as his or her knowledge of research methodology.

The dissertation is presented in the form of a monograph in French or in another language. A series of coherent publications may also be presented for the defense. No abstract of the dissertation or additional publications are required for submission.

The defense of the dissertation is advertised in the given university and the department. It is public and open to anybody who wishes to attend it. The defense takes place before a committee. The committee is appointed by the university on the proposal of the department. It consists of five members, holders of the doctoral degree. At least one member must be from outside the awarding institution. Academics from other countries may sit on the committee, a practice which is usual.

A copy of the dissertation must be deposited in the library of the awarding institution. The titles of dissertations may be published in national scientific publications.

## **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctor's degree.

## **5. THE SECOND DOCTOR'S DEGREE**

There is no second doctor's degree.

## **6. RECOGNITION**

The recognition procedure for foreign doctorates in the Belgian French-speaking community is similar to that applied in the case of foreign first- and second-cycle diplomas in keeping with the law of 19 March 1971 and the decrees of application concerning it. There is no automatic equivalence of foreign doctorates: the examination of applications takes place on an individual basis.

The law distinguishes two competent instances so far as the examination of foreign doctorates is concerned: the universities themselves, when the foreign title corresponds to a university doctor's diploma awarded in the French-speaking community as a scientific degree, and the Ministry of Higher Education and Research, when the foreign diploma corresponds to a university doctor's diploma awarded in the French-speaking community as a legal degree. In the latter case, before taking a decision, the Minister (through its General Directorate of Higher Education and Research) resorts to an equivalence commission composed of well-known professors in the given discipline who represent all universities in the French-speaking community of Belgium. The equivalence commission delivers its final decision on the application after it has received the opinions of three examiners who evaluate the conformity of the thesis with the demands set by the French-speaking universities in this respect. The examination of the doctor's degree implies that the applicant should have previously obtained the equivalence of the foreign second-cycle degree which authorizes him or her to enroll in doctoral studies.

# BULGARIA

## 1. GENERAL INFORMATION

In Bulgaria, the doctorate is regarded as a stage of postgraduate studies. There are two levels of doctoral degrees: the Candidate of Sciences (Kandidat na naukite) and the Doctor of Sciences (Doktor na naukite).

The first doctoral degree, the Candidate of Sciences, requires at least three years of study after graduation from a university-level institution. The second doctoral degree, the Doctor of Sciences degree, is the highest academic degree awarded in the country. It requires many years of individual research.

The system of academic degrees is portrayed in the Table below.

Field of study	Number of years elapsed since completion of secondary education					
	4	5	6	7	8	9 ...
1. Education		Di			K	D
2. Humanities		Di			K	D
3. Religion, theology		Di			K	D
4. Fine arts, applied arts, and architecture		Di			K	D
5. Law		Di			K	D
6. Economics and social sciences		Di			K	D
7. Administration, business, commerce		Di			K	D
8. Exact and natural sciences		Di			K	D
9. Engineering, technology		Di			K	D
10. Medical sciences*			Di			K
11. Agriculture, forestry, fisheries		Di			K	D

D - Doctor of sciences (Doktor na naukite);

Di - Higher Education Diploma (Diploma za zavarsheno visshe obrazovanie)

K - Candidate of sciences (Kandidat na naukite).

\* The duration of studies in medical sciences varies: in medicine 6 years, in veterinary medicine 5.5 years, and in dentistry and Pharmacy 4.5 years.

## 2. INSTITUTIONAL FRAMEWORK

Doctoral studies are regulated by the Law on Scientific Titles and Academic Degrees and by a special regulation issued by the Ministry of Science and Education.

Universities and research institutes are authorized to set up doctoral studies. They announce the places available annually for open competition for the first doctoral degree. Each year the state provides doctoral fellowships for a number of postgraduate students. The institutions can also announce places financed from

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their own resources. Doctoral study programmes paid for by the students themselves are also offered, especially to foreign students.

Each institution offering doctoral studies makes a plan concerning the number of candidates and of disciplines for doctoral students financed from its own resources. Similar planning at national level is carried out by the Ministry of Science and Education for all the students financed by the state.

The first doctoral degree can be earned in two ways: by enrolling in doctoral study programmes or through independent study and research. The second doctoral degree can only be earned through independent research.

### **3. THE MAIN ROUTE LEADING TO THE DOCTOR'S DEGREE**

The most common route leading to the doctor's degree is enrollment in a doctoral study programme.

#### **3.1. Admission**

The basic prerequisite for enrollment in a Candidate of Sciences programme is possession of the higher education diploma (university level) obtained with a level of achievement indicating an aptitude for scientific research. The only restriction is that applicants must not be over thirty-five years of age. Applicants must also present a curriculum vitae, a list of publications or research and development works (if any), as well as recommendations from their employers or from well-known academics in the given field. Applicants take entrance examinations in the field of specialization (oral and written) and in a foreign language. Successful applicants are those who have been granted an average grade of 5 (very good) in the field of specialization and 4 (good) in a foreign language. The maximum grade is 6.

A special commission selects the best applicants as determined by the results on the entrance examinations, success in previous studies, recommendations, and personal research and presents its opinion to the Academic Council of the institution. Selected candidates are registered by a decree of the rector of the higher education establishment or by the director of the research institution, respectively.

#### **3.2. Organization of Doctoral Studies**

The forms of education are full-time (regular), part-time, and independent training. The nominal duration is three years for regular study, four years for part-time study, and no limitation for independent training.

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Each doctoral student has a specially appointed supervisor who must be a holder of the second doctoral degree or be a habilitated person (a habilitated person is the holder of one of the following titles: full professor, associate professor, or the equivalents of both in research institutes). This kind of work entails extra remuneration or is considered to be a part of the normal teaching and research load.

With the assistance of the supervisor, an individual plan of studies for each doctoral student is elaborated. This plan specifies the subjects to be studied, the lectures to be attended, the research to be carried out, the stages for the preparation of the thesis, etc. The individual plan is discussed in the group in which the respective doctoral student is trained and is approved by the Academic Council of the institution. Any modifications in the plan must be approved by the Academic Council. Once a year (or more often, if necessary), the Academic Council assesses the progress made.

A doctoral student can have as many meetings with his or her supervisor as needed. He or she can also receive advisory help from other faculty members belonging to the respective institution or to another institution as well as from academics from other countries. During the period of postgraduate studies, a student may interrupt and resume studies, carry out part of his or her required research in other institutions, attend international workshops or courses as part of his or her training, and undertake part-time teaching. Doctoral students are involved in the academic life of the group in which they are trained. Those students who enroll in programmes at higher education institutions, are, as a rule, involved in the teaching-learning process by being asked to lead seminars and to supervise laboratory work.

Full-time doctoral students receive scholarships, the amounts of which are generally fifty percent higher than the minimum salary in the country. Part-time doctoral study is also encouraged. The students involved have the right to take six months of additional leave per year.

Until recently, doctoral students were centrally appointed to their future work places. Now every student is individually responsible for his or her job search.

Students who have completed a doctoral course programme have an advantage when applying for teaching positions at higher education institutions or for research positions in research institutions. Possession of the Candidate of Sciences degree is an advantage when seeking an appointment as an associate professor. For someone who is already employed in a higher education or research institution, the award of the Candidate of Sciences degree leads to a salary increase or to a better paid position.



### **3.3. Programme**

Doctoral study programmes consist of both postgraduate courses and research. About one third of the total time is devoted to postgraduate courses and two-thirds to research. During their periods of study, doctoral students attend lectures and seminars in their fields of specialization and study foreign languages (one or more). The courses which students must take are reflected in their individual plans.

Doctoral students sit examinations for each course in which they are enrolled. The examinations can be written or oral. After passing the examinations, the candidates obtain a certificate stating the completion of the course programme. This certificate is one of the documents which must be presented by a doctoral student in order to be admitted to the defense of his or her dissertation.

### **3.4. Dissertation**

The principal task, required in order to be awarded the Candidate of Sciences degree, is the preparation and defense of a dissertation. The topic of the dissertation must be adopted by the supervisor and approved by the Academic Council.

A dissertation for the degree of Candidate of Sciences should be a scholarly work which makes a contribution to knowledge in the given field and reveals the aptitudes of the candidate for independent research. A completed dissertation is presented in the form of a monograph in the national language.

An applicant must also present an abstract of the dissertation containing the basic ideas and findings of his or her research as well as publications reflecting the general outcomes of the research. An abstract of the dissertation is to be disseminated to the institutions concerned.

Two habilitated persons, one of whom must be a full professor, are appointed by the Academic Council as official opponents to assess the dissertation. They must present their reviews of the dissertation to the Specialized Scientific Council, a body which is authorized by the Supreme Attestation Commission to confer doctoral degrees.

The defense of the dissertation is advertised in the department, in the given institution, and in the press. It is public and open to anybody who wishes to attend it. The defense takes place before a Specialized Scientific Council. These Councils are set up by the Supreme Attestation Commission to assess dissertations in the given field in those higher education and research institutions which are acknowledged for their achievements in the respective field of science. A Specialized Scientific Council is composed of no less than twenty members, all

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habilitated persons. Acknowledged specialists in the relevant field can also sit on the Council.

The Specialized Scientific Council takes a decision by secret ballot. According to the law, the decisions of the Council must be approved by the Supreme Attestation Commission. A diploma is granted by the Supreme Attestation Commission to the successful candidates. In case of failure, the dissertation must be revised, and the defense, repeated.

A copy of the dissertation must be deposited in the library of the degree-granting institution, in the national library, and in the national data bank. Further copies of dissertations are available in Xerox and in microfilm forms. The titles of the dissertations with their summaries may be published in national scientific publications .

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

Another route leading to the Candidate of Sciences degree is that of independent research. An applicant must prepare and present a dissertation to the Specialized Scientific Council and defend it in order to be awarded the first doctor's degree.

An applicant can be associated with a higher education or research institution. In this case, the Academic Council determines the time required for the completion of the dissertation (no more than 2 years) and appoints a supervisor, if necessary. During the period of time established by the Academic Council, an applicant enjoys the right of being a part-time doctoral student.

The procedures concerning examinations, defense of the dissertation, and award of the degree are the same as in the case of regular doctoral study programmes.

### **5 THE SECOND DOCTOR'S DEGREE**

The basic prerequisite for earning the Doctor of Sciences degree is prior award of the Candidate of Sciences degree. The candidate must prepare a substantial thesis based on independent research. The dissertation must represent a significant and original contribution to the given branch of science, and it must be defended before the Specialized Scientific Council established for the discipline in question.

In the case of the Doctor of Sciences degree, three official opponents are designated. The procedures for the defense of the dissertation and the award of the degree are analogous to those for the Candidate of Sciences degree.

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### **6. RECOGNITION**

In Bulgaria, the Supreme Attestation Commission is responsible for the recognition of doctoral degrees obtained abroad. The Commission takes decisions during its sessions based on the reports made by its specialized commissions which have been set up for different fields of science.

# CANADA

## 1. GENERAL INFORMATION

The doctorate is the highest academic qualification awarded in Canada. For purposes of this chapter, it is defined as the PhD degree, which is obtainable in areas of study such as the sciences, the arts, education, engineering, business, and the health sciences. Some universities may award doctorates the titles of which reflect specific disciplines or disciplinary groupings, for example: Doctor of Music (DMus); Doctor of Education (DEd); Doctor of Sciences (DSc); Doctor of Laws (LLD). Although these degrees are often similar in their requirements to the PhD, they have been excluded from this description of the doctorate.

The system of degrees in higher education is portrayed in the Table1 below.

Field of study	Number of years elapsed since completion of secondary education						
	4	5	6	7	8	9	10
1. Education	B	M	M				D
2. Humanities	B	M					D
3. Religion, theology	B				M		D
4. Fine arts, applied arts, and architecture <sup>2</sup>		B	M				D
5. Law <sup>3</sup>		B/M	B	B			D
6. Economics and social sciences	B	M					D
7. Administration, business, commerce		B		M			D
8. Exact and natural sciences	B	M					D
9. Engineering, technology	B		M				D
10. Medical sciences <sup>4</sup>		B	M				D
11. Agriculture, forestry, fisheries	B	M					D

- B - Bachelor's degree;  
M - Master's degree;  
D - Doctor's degree.

### NOTES:

- University degrees in Canada are generally not subject to centralised regulation, either with respect to content or to duration of studies. The time for completion of the PhD is nominally three to four years of full-time study following award of the bachelor's degree. In the humanities and the social sciences, the actual duration is often significantly longer; in the sciences and in engineering, however, it may sometimes be less. Completion in fewer than three years from initial enrolment as a doctoral student is very rare. The above table should therefore be regarded as a very general, rather than as a definitive guide. Canadian universities establish their own degree requirements, and only they can provide up-to-date and reliable information with respect to admission and degree completion requirements.
- In some universities, architecture is offered as a first (bachelor's) degree, and may be followed by a master's degree. Elsewhere, the master's degree may be the first professional degree in

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architecture. Admission to the programme would normally require completion of a bachelors degree in a cognate field.

3. In law, some students may elect to earn a four-year bachelor's degree (BA BSc etc.), rather than three years for an undergraduate degree, prior to applying for admission to a law school. This option would then result in an overall longer period of study leading to the doctorate in law.
4. The amount of time required to complete a degree in health-related fields depends upon the discipline. The first degree in medicine is the Doctor of Medicine (MD), and in dentistry, the Doctor of Dental Surgery (DDS). These first professional degrees are normally earned after at least seven years of study following secondary school graduation. Students may earn masters and doctoral degrees following the MD and DDS, the exact duration of which may vary from institution to institution .

## 2. INSTITUTIONAL FRAMEWORK

Higher education in Canada is not constitutionally the responsibility of the central government. Under the Constitution, power to make laws «in and for each province» in matters relating to education rests exclusively with the provinces. This measure, in large part, applies to doctoral studies as well.

While there are no national regulations for doctoral studies, some provinces have planning bodies which examine both societal needs for graduates and the ability of individual universities to offer the programmes in question. In the absence of these, universities are nevertheless constrained from the uncontrolled offering of doctoral degrees by several factors inherent in the Canadian understanding of the degree. The assumption is that a doctoral programme will need relatively senior faculty members who are active in research to supervise the students. Moreover, adequate library, laboratory, and, increasingly, computer facilities are minimal requirements that must be in place for doctoral work to be offered.

It is also important to note that students enter doctoral work at an age when financial independence is important. Most universities have in place a system of scholarships, fellowships, teaching assistantships, and/or research assistantships for the financial support of doctoral students. Thus, the considerable cost of offering doctoral work itself operates as an internal control, whether or not other external pressures restricting growth exist.

In the sciences and in engineering, grants to individual faculty members from the Medical Research Council (MRC) and the Natural Sciences and Engineering Research Council (NSERC) regularly include money for the financial support of graduate students. The Social Sciences and Humanities Research Council of Canada (SSHRC) has begun to adopt this practice as well. In such instances, a student applying for doctoral work must not only meet or exceed the minimum requirements set by the university or department, but must be successful in finding and funding a professor willing and able to take him or her on for research supervision. One can see, then, that availability of funding is an important factor in doctoral admission (see 3.1.).

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Both NSERC and MRC also offer graduate fellowships, vested in the student, that ease the financial burden on the grants of individual professors. Some provinces have a system of scholarships or other awards in place for doctoral students, and many universities have money through their Faculties or Schools of Graduate Studies. These awards are usually available to students in all areas of study. In certain other areas of doctoral study, there is competition for national scholarships, such as those offered by SSHRC as well as for available provincial or internal awards.

Opportunities for employment as graduate teaching assistants or graduate research assistants are also widespread within the Canadian doctoral system and are commonly available to all students in science and engineering: less so for those in other areas of study. While funding arrangements vary from programme to programme and from university to university, at least some measure of funding for at least an initial period of one to two years is commonplace in doctoral programmes nationwide.

Unlike some European universities, Canadian universities regularly charge tuition fees for doctoral students. These can be as high as several thousand dollars per annum, and in some provinces they are much higher for non-Canadian students. Funding for the student is important for this reason as well. Nevertheless, it is certainly not unknown for universities to offer, and students to accept, admission to a doctoral programme with no funding attached.

### **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

Admission to a PhD programme in a Canadian university typically requires either a completed master's degree (of one or two years in duration) or a year of work at the master's level. Admission directly from the baccalaureate degree is less common. For admission to the master's or directly to the PhD, a four-year baccalaureate is usually required; however, the educational system in Quebec is such that its three-year baccalaureate often suffices. In many subject areas, admission to masters' programmes is very competitive, so that a grade average in excess of the minimum requirement may be necessary to actually gain admission. High grades, especially in the subject area to be studied in graduate school, is the norm. Letters of recommendation from undergraduate or graduate instructors are commonly required as well. Entrance examinations are not usual.

For many doctoral students, especially those who earn a master's degree at one university and a doctorate at another, admission is quite formal being based on grades and references from both the baccalaureate and masters' programmes. In such cases, the university offering the doctorate usually requires completion of the master's degree before admission to the doctorate. For others, however,

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especially those who continue from the master's to the doctorate at the same university, formal admission is to a master's programme, and after one or two years in the programme, the student may be re-classified into the doctorate (sometimes without completing the master's degree). A student who is not academically strong, however, may be permitted to complete the master's degree but be barred from going on to the doctorate. Because the doctorate is presumed to be a research-based degree, many universities attempt to assess a candidate's research capability and potential in the admissions process - for example, by the use of a detailed questionnaire supplied to potential referees.

### **3.2. Organization of Doctoral Studies**

The management and administration of doctoral studies within Canadian universities is regularly vested in a faculty or school of graduate studies which is headed by a Dean of Graduate Studies, or, less commonly, by a Director. While undergraduate programmes typically have their orientation to the faculty of their discipline - that is, undergraduate education in humanities is the responsibility of the Faculty of Humanities - graduate education at most universities cuts across disciplines so that all programmes are managed through one graduate faculty that serves the whole university. However, the precise relationship between graduate faculties and other faculties varies from university to university.

The assignment of supervisors to doctoral students is a very common practice. A supervisor must have a PhD degree, research experience, and experience in the supervision of students. There are no formal limits as to the number of students which a supervisor can have at any particular time. A supervisor is not paid an additional fee for this kind of work. The main incentives for supervision are the gaining of prestige among colleagues, the possibility of supervising research of exceptional quality, and the strengthening and diversification of a supervisor's research team. Supervision can also be considered as a part of teaching and research assignments.

The frequency of meetings between a student and his or her supervisor is subject to mutual agreement. A student may also have the option of enlisting the support and guidance of other faculty members of his or her principal department, or scholars from another university, or indeed, from outside the country.

During the period of doctoral studies, a student may (subject to the particular degree regulations of a given university) interrupt and resume studies, do part-time teaching and research, carry out part of his or her required research in other universities or research centres, and attend international workshops or short courses in the country and abroad as part of his or her training.

Doctoral study, while certainly advantageous in many ways, does not in itself entitle the holder to future employment. A doctoral degree may result in job promotion or a salary increase, but not necessarily. The level of university

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education attained is only one of the factors governing a person's entitlement to job promotion, salary increase, etc., in Canada.

### **3.3. Programme**

In the past, a student admitted to a programme of doctoral study in a Canadian university would typically be required to undertake doctoral course work, pass a comprehensive examination in the entire subject field, and prepare a major piece of research in the form of a thesis or dissertation. In recent years, however, the requirement for a comprehensive examination has either been changed or eliminated at certain universities. There has been a widespread trend in science and engineering to reduce course work at the doctoral level.

The dissertation or thesis remains more firmly in place than doctoral course work or examinations. Nevertheless, the traditional lengthy thesis of original, previously unpublished work is no longer the sole research vehicle in science and engineering. In areas in which research is typically published in short articles by teams of authors and generated at a rapid rate, the traditional thesis format has been viewed as an anachronism. Some programmes, therefore, permit the use of publishable or even previously published articles in a thesis, even when they have been jointly authored. This area is one in which further change is likely.

When courses are offered, course programmes consist of lectures and seminars. Programmes are devoted to advanced studies in the primary field, auxiliary subjects, research methodology, a foreign language, and to a thesis proposal. The total amount of time allocated to each course component ranges from ten to thirty percent.

A student studying for a doctoral degree takes the course examination for each course separately. The examinations may be either oral or written. In addition to a possible requirement to undertake course work, doctoral students must successfully submit a thesis proposal, which must be accepted before in-depth work on the dissertation can begin.

### **3.4. Dissertation**

As stated above, the submission and defense of a substantial dissertation are the major requirements for the award of the doctoral degree. While students in doctoral programmes regularly have a principal supervisor, the use of supervisory committees is very widespread. Approval of the thesis topic by the committee and the department is also commonplace. When completed, the thesis is almost always sent to an external examiner for review. That individual is typically an expert in the subject matter of the thesis and at arm's length from the candidate and the supervisory committee. The external examiner is normally required to be from another university and is sometimes from outside the province or even from



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outside the country. Following approval by the external examiner, the thesis is usually defended before a university committee. At many universities, an expectation exists that the external examiner will be invited to the defense.

Following the defense, the corrected document is placed in the University Library; a copy is placed in the National Library of Canada; and another copy is filed with University Microfilms International (UMI) in the United States. Abstracts are published in a periodical of UMI, Dissertation Abstracts.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctoral degree.

### **5. THE SECOND DOCTOR'S DEGREE**

The configuration of a first and second doctorate is unknown in Canada.

### **6. RECOGNITION**

In Canada, there is no national policy regarding equivalences of qualifications earned abroad. Evaluation of overseas credentials for purposes of gaining admission to university level studies is undertaken by the institutions themselves. The universities, as autonomous entities, have the right of final decision as to whether out-of-province or foreign credentials meet their institutional requirements. In addition, persons holding overseas credentials and wishing to practice a profession or trade in Canada will generally be required to submit their credentials to the relevant professional or related regulatory bodies for assessment. These bodies have their own criteria for determining whether or not overseas credentials meet their specialized requirements, and whether or not they entitle the bearer to lawfully practice the profession or trade. Whether or not foreign doctoral degrees are recognized in Canada will depend upon a number of factors, including a review of the nature and content of the degree as well as the purpose for which recognition is being sought.

Until recently, there have been no international agreements which have significantly affected the assessment of foreign credentials in Canada. However on 6 March 1990, the Government of Canada ratified the UNESCO Convention on the Recognition of Studies, Diplomas, and Degrees Concerning Higher Education in the States belonging to the Europe Region. This act has resulted in the establishment of the Canadian Information Centre for International Credentials (CICIC). Once fully in operation, CICIC will act as a referral agency and route inquiries to the most appropriate source of information on the recognition of non-Canadian degrees.

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Canada is also a member country of the TRACE Network, an international computerized information network on higher education. Canada believes that participation in this network is an effective means of exchanging quality information on education systems and on the nature of the qualifications offered by postsecondary institutions in various countries. TRACE also serves to further the mandate of UNESCO to facilitate the international mobility of students and scholars.

The Association of Universities and Colleges of Canada is a national association representing Canadian universities at home and abroad. The AUCC does not undertake assessments of the equivalency of overseas credentials. It is, however, ideally positioned to provide up-to-date information to overseas-based scholars and institutions on the nature of the higher education system of Canada.

The Association of Registrars of Universities and Colleges of Canada (an associate member of the AUCC) is a participant in the work of bodies such as the Association of International Educators (NAFSA) and the American Association of Collegiate Registrars and Admissions Officers (AACRAO). These organizations undertake in-depth studies of educational systems and make placement recommendations for use by the universities.

# CZECH REPUBLIC

## 1. GENERAL INFORMATION

Doctoral studies are regarded as a form of postgraduate research training. The system of research training was implemented in 1951. In the course of its more than forty years of existence it has had a fairly complicated development. Up to 1990, these studies took place at two levels:

- i. postgraduate studies in the form of aspirantura leading to the first doctoral degree of Candidate of Sciences (Candidatus Scientiarum- CSc.);
- ii. research and other scientific activities in the form of doctorantura leading to the second doctoral degree of Doctor of Sciences (DrSc.).

Since 1990, there have been three alternative routes for research training leading to advanced degrees: postgraduate doctoral studies leading to a doctor's degree (Dr. - equivalent to the PhD) - a new route of increasing importance and the two former routes, the aspirantura and the doctorantura, which are decreasing in importance. These three routes are gradually converging. The new Higher Education Act which will bring the transition period to a close will implement only one route for postgraduate research training, that of doctoral study leading to the advanced degree of PhD.

The system of academic degrees is presented in the Table below.

Field of study	Number of years elapsed since completion of secondary education							
	3	4	5	6	7	8	9 ...	
1. Education	B	M	M			D1		D2
2. Humanities	B		M			D1		D2
3. Religion, theology	B		M			D1		D2
4. Fine arts, applied arts, and architecture			M			D1		D2
5. Law			M			D1		D2
6. Economics and social sciences	B		M			D1		D2
7. Administration, business, commerce	B		M			D1		D2
8. Exact and natural sciences	B		M			D1		D2
9. Engineering, technology	B		M			D1		D2
10. Medical sciences	B			M			D1	D2
11. Agriculture, forestry, fisheries	B		M			D1		D2

- B - Bachelor's degree (Bc);  
M - Master's degree (Mgr., Ing., MUDr., MVDr);  
D1 - Doctor's degree (Dr. or Csc.);  
D2 - Doctor of Sciences degree (DrSc.).

**Note:** This Table illustrates the present situation of the transitional period in academic degrees.

## **2. INSTITUTIONAL FRAMEWORK**

Postgraduate studies leading to the doctoral degrees are regulated according to the following legal dispositions:

- i. Decree No. 53 of the Czech Commission for the Awarding of Scientific Degrees of 9 September 1977;
- ii. Decree No. 64 of the Czech Commission for the Awarding of Scientific Degrees of 19 September 1977;
- iii. Higher Education Act. No.172 of May 1990;
- iv. Law on the Academy of Sciences of the Czech Republic of May 1992.

The first, the second, and the fourth of the above dispositions lay down principles and establish procedures for research training in the form of aspirantura and conditions for the award of the CSc. and the DrSc. degrees. The third disposition specifies the general principles of postgraduate doctoral studies. Specific procedures for doctoral studies are elaborated in the statutes of the individual higher education institutions.

The universities themselves are authorized to set up doctoral studies and to award degrees. The right for them to do so is granted by the Ministry of Education, Youth, and Sports upon the proposal and the recommendation of the Accreditation Commission of the Government of the Czech Republic. The Ministry of Education, Youth, and Sports undertakes methodological guidance, providing the universities with recommendations for organizing and managing doctoral studies.

Doctoral studies are organized in individual departments or in specialized training centres, the creation of which has been authorized by the Ministry of Education, Youth, and Sports upon the recommendation of the Accreditation Commission, to conduct doctoral studies in particular fields, to hold doctoral examinations, and to award doctoral degrees.

Institutions of higher education are empowered to organize doctoral studies on the basis of two criteria: the level of academic/scientific qualification of teachers and the academic/scientific reputation of the institution or of the faculty. Fifteen institutions of higher education out of twenty-three (i.e. sixty-five percent) have, so far, been granted the right to organize doctoral studies and to award doctoral degrees. The following disciplines are involved: the humanities (theology, philosophy, history, philology, pedagogy, psychology), social sciences (sociology, politics, law, economics), natural sciences (mathematics, physics, geology, geography, chemistry, biology, ecology), engineering (technical sciences, agriculture, forestry), the arts (history of the arts, theory and history of literature, history of music, aesthetics and the theory of artistic activities), and medical

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sciences (pharmacology). In medicine and veterinary sciences, the doctorate is a professional degree.

Each group of disciplines consists of fields of studies and specializations, the list of which is officially approved by the Accreditation Commission. Individual faculties derive from these specializations the subjects of studies, curricula, and the programmes of examinations, as well as the topics of dissertations. Everything else concerning the organization and the contents of doctoral studies is determined by the institutions and faculties and regulated by their statutes.

At the level of departments or of training centres, doctoral studies are managed by the Boards of Guarantors for Postgraduate Studies which are organized for each individual field of study. The president and the members of each Board are approved by the Academic Council of the faculty and are appointed by its dean. They are responsible for the quality of studies in a particular field of study.

Interest in doctoral studies is enormous. Enrollments in doctoral studies for the last three years (1990-1993) have increased by a factor larger than three.

The financing of doctoral studies comes from the state budget in the case of full-time and certain foreign students. Research grants, scholarships, and part-time employment as teaching or as research assistants are also possibilities. Part-time and some foreign students must cover their own expenses through the payment of prescribed study fees.

### **3. THE MAIN ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

Only candidates having a university-level degree (Mgr., Ing., MUDr., MVDr.) may be admitted to doctoral study programmes. Admission is competitive, based on a selection procedure.

The departments and training centres announce the opening of admission procedures, stating the available fields of study and other relevant information. Applicants submit their application forms which must be accompanied by a university-level diploma, relevant documents on previous professional experience (if any), a list of publications (if any), and a curriculum vitae. Some departments will also accept letters of recommendation.

Applicants must then take entrance examinations in their subjects of specialization and in a foreign language. These examinations are administered by an admission commission of the given training centre. The admission commission proposes the enrollment of those applicants who meet the admission

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requirements. If the number of applicants with positive results in the entrance examinations is larger than what the centre can accept, the admission commission selects the best applicants on the basis of their results on the entrance examinations, their publications, and their previous scientific or student research activities. Successful applicants are enrolled by decision of the dean upon the proposal of the Board of Guarantors.

### **3.2. Organization of Doctoral Studies**

Doctoral studies can be both full-time and part-time. The nominal duration of full-time studies is three years (in some fields, four years) and that of part-time studies, four or five years. The real duration, however, is usually longer. It is possible to interrupt both these forms of study for a certain period of time if some serious reason exists. The results of examinations are valid up to the seventh year of study.

The academic year of postgraduate doctoral studies at most institutions of higher education is the same as for undergraduate studies; however, some institutions of higher education organize intensive workshops and consultations during vacation periods.

A supervisor, a holder of the academic title of Professor or of Associate Professor, is appointed for each doctoral student. The supervision of doctoral studies is considered to be prestigious, but it does not entail extra remuneration. It is considered to be a part of the normal teaching and research load.

Doctoral students work according to their individual plans of study, the progress of which is assessed by their supervisors (annually) and discussed in seminars and in the meetings of the Faculty Academic Councils. Doctoral students can have meetings with their supervisors as many times as needed. They can also receive advisory help from other persons in the given university as well as from specialists in the Academy of Sciences or from academics from other countries.

During their periods of doctoral study, students may interrupt and resume studies, carry out parts of their required research in other institutions, attend international seminars or courses as part of their training, and participate in the teaching and research activities of their departments as tutors or as research assistants.

The award of the doctor's degree entitles its holder to further employment both in higher education and research and in industry. Students who have completed a postgraduate study programme have an advantage when applying for teaching positions at higher education institutions or for research positions in research institutions. For someone who is already employed, the award of the

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doctor's degree leads to a salary increase or to a better paid position in a higher education or a research institution.

### 3.3. Programme

Doctoral study programmes include both postgraduate courses and research. The courses which must be taken by doctoral students include both compulsory and optional subjects. Doctoral students must attend lectures and seminars and take part in consultations. They must also pass examinations in compulsory and optional subjects which are a part of their curricula. The number of subject examinations is set up by the departments. Examination periods are not fixed but set individually (*ad hoc*).

Doctoral programmes are divided roughly into three periods of varying length. The first is that of theoretical studies, the second, the preparation period for a dissertation, and the third, the conclusion of studies.

Theoretical studies lead either to in-depth studies (e.g., law - constitutional law) or to interdisciplinary specialization (e.g., agronomy - economics of agriculture). Study programmes can be individual or collective. They consist of modules, the contents and sequences of which may change according to the needs of the student. Some of these modules prepare students for the doctoral examination; others are oriented towards the theoretical background of the dissertation .

Postgraduate studies at some faculties, mainly in the natural and the technical sciences, start with the selection of the dissertation subject. The curricula are designed to be close to the subjects of dissertations. In the humanities and in the social, the medical, and the veterinary sciences, doctoral studies begin with the theoretical background. The expectation is that students will find themselves in these programmes and will orient themselves in their research.

In making decisions as to what speciality they wish to develop in doctoral studies, students may be influenced by teachers whose personalities and research orientations they respect and upon whose work they wish to pattern their own. In such cases, doctoral students become the students of eminent teachers or scientists, members of scientific schools. This approach to doctoral studies occurs sporadically in Czech institutions of higher education.

In addition to subject examinations (if any), doctoral students must take doctoral examinations (*rigorosum*) administered by a commission which is approved by the Academic Council of the given faculty. At some institutions, it is possible to pass the examination immediately upon completion of theoretical studies; at others, just before the defense of the dissertation.

### **3.4. Dissertation**

In the course of postgraduate studies, a student must complete, present, and defend a dissertation in order to be awarded the doctoral degree. The dissertation topic must be approved by the supervisor and by the Board of Guarantors.

A dissertation must be a scholarly work based upon original research. It should make a contribution to a field of knowledge. It must also demonstrate the abilities of the student to solve a scientific problem. In any case, it must contain new information, irrespective of how it was acquired - in a laboratory through experiments, by generalization of practical experience through measurement, by study of archival materials, or theoretically. This new information should contribute to the development of knowledge as well as to practice and should be statistically or otherwise objectively documented. The new information should also be compared to the state of knowledge at the input, i.e., the period during which work on the dissertation was begun. It is recommended that the results of the dissertation be at least partly published or otherwise publicized (e.g., at conferences), so that the dissertation can be supported by the scientific and research community, not only by the opinions of the opponents.

If the subject of the dissertation is so complex that it requires the co-operation of several postgraduate students, the contribution of each must be clearly identified.

A dissertation can be presented in the form of a monograph, a project, or another form of material output. Along with the dissertation, an abstract of it is presented and distributed to the institutions concerned. The abstract should reflect the basic ideas and outcomes of the research, indicate its degree of originality, and assess possibilities for practical application. The abstract should also include a list of the student's publications. The results of the evaluation of the dissertation undertaken by the training centre and by the supervisor are also submitted.

The defense of the dissertation takes place in the form of a scholarly/scientific discussion before a commission which is set up ad-hoc to accept each dissertation. The defense is public and open to anybody who wishes to attend it. It is advertised in the given department or university.

The dissertation is evaluated by three opponents, one of whom must be a professor and the others, Candidates of Sciences, holders of doctorates, or associate professors. At least two of these persons must be from outside the training centre and from outside the supervisor's workplace. The commission and the opponents are proposed by the Board of Guarantors, approved by the Academic Council, and appointed by the dean.

The commission takes a decision through a vote at the final closing meeting. In case of positive results, the president of the commission forwards a proposal to



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the Academic Council of the faculty for the award of the doctor's degree. In case of failure, the dissertation must be revised and the defense may be repeated.

A copy of the dissertation must be deposited in the library of the awarding institution and in the central library of the given university. Further copies of the dissertation are available at the training centre.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

At present, the other route for postgraduate research training is the aspirantura. It is undertaken in some institutions of higher education and in the research institutes of the Academy of Sciences. There are no essential differences between aspirantura and doctoral studies; however, the management of doctoral studies is more autonomous and more independent from state intervention than the management of aspirantura.

### **5. THE SECOND DOCTOR'S DEGREE**

The degree of Doctor of Sciences (DrSc.) can be earned through long-term research and the publication of a dissertation which contributes to the development of scientific knowledge. The defense of the dissertation is in fact the defense of a lifetime work which must be documented not only by publications but also be accepted by the academic/scientific community.

The Doctor of Sciences degree can be awarded only to the holders of the first doctor's degree (Candidate of Sciences). The preparation of the dissertation is carried out independently. The qualifying requirements for the dissertation for the Doctor of Sciences degree are higher than those for the dissertation of the CSc. degree. The dissertation must to be a scholarly work which makes a significant contribution to knowledge or to the solution of important practical problems.

The dissertation is usually presented in the form of a monograph. A topically coherent set of publications or university textbooks may also be presented as a doctoral dissertation if they meet the prescribed requirements set for the Doctor of Sciences degree. Discoveries or inventions can constitute a part or a core of the doctoral dissertation.

Along with the dissertation, its abstract and a list of publications are also submitted. In addition, a review of publications and a reference to the dissertation of the applicant's employer are also presented. A relevant defense commission reviews the documents presented and gives permission for the defense to take place.

Defense commissions are set up in higher education and research institutions by the Czech Commission for Scientific Degrees. No less than three opponents

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are appointed. At least two of them must be holders of the Doctor of Sciences degree or of the title of Professor, and two of them must be from outside the awarding institution.

The defense of the dissertation is made public. Any objections to the award of the degree can be filed within a three-year period following the defense.

Between 1969 and 1989, 21,882 doctoral degrees were awarded in the Czech Republic, of which ninety-two percent were those of Candidate of Sciences and eight percent, those of Doctor of Sciences. These figures illustrate the differences in standards existing between them. Most of the applicants for the DrSc. degree were employed by institutions of higher education (over fifty percent); a smaller number, by the Academy of Sciences (approximately forty-four percent) .

At present, the number of awarded DrSc. degrees is decreasing. The major interest is in the PhD degree.

### **6. RECOGNITION**

In the Czech Republic, doctoral degrees obtained abroad are automatically recognized if an agreement on the mutual recognition or the equivalence of diplomas exists. In this case, the university determines the equivalence of the diploma and certifies its recognition by issuing clauses of verification.

In other cases, the nostrification of the foreign diploma is required. The applicant must present:

- an application form;
- a citizenship certificate;
- a higher education diploma;
- a doctoral diploma obtained abroad and documents on previous studies and examinations;
- a doctoral thesis.

The Czech Republic has concluded multilateral and several bilateral agreements on the mutual recognition or the equivalence of diplomas with Afghanistan, Belarus, Bulgaria, Cuba, Hungary, India, Poland, Romania, Russia the Slovak Republic, Slovenia, and Yugoslavia.

# DENMARK

## 1. GENERAL INFORMATION

In Denmark, in recent years, doctoral studies at higher education institutions have undergone reform. Presented here is the description of the new system which has been in effect since 1 January 1993.

The PhD degree is regarded as a stage of postgraduate studies (research training through research). It requires three years of study after award of a master's degree. Postgraduate research training can, however, also be started before the award of the master's degree.

Danish universities also award doctor's degrees (doctorgrad). This degree is considered to be equivalent to the German Habilitation.

The academic degrees awarded in Denmark are presented in the Table<sup>1</sup> below.

Field of study	Number of years elapsed since completion of secondary education						
	3	4	5	6	7	8	9 ...
1. Education	B		K			PhD	D
2. Arts	B		K	M		PhD	D
3. Religion, theology			K			PhD	D
4. Fine arts				K		PhD	D
5. Architecture			K			PhD	D
6. Law, economics	B		K			PhD	D
7. Political sciences	B		K			PhD	D
8. Social sciences	B		K	M		PhD	D
9. Commercial sciences	B		K			PhD	D
10. Exact and natural sciences	B		K			PhD	D
11. Engineering, technology <sup>2</sup>		B	K			PhD	D
12. Medical sciences							
medicine					K		PhD D
dentistry			K			PhD	D
pharmacy			K			PhD	D
veterinary medicine				K			PhD D
13. Agriculture, forestry	B		K			PhD	D

B - bachelor's degree (bachelorgrad);

K - master's degree (kandidatgrad);

M - magister;

PhD - PhD degree;

D - doctor's degree.

### Notes:

1. Denmark is now implementing a general 3 + 2 + 3 (years) structure within as many fields of study as possible. The overall structure will be as follows: the bachelor's degree after three years of university study; the master's degree after two years, i.e., five years in all; the PhD degree after

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three years; i.e., a total of eight years. The structure may not be valid for some fields of study, such as Fine Arts and Architecture which are placed under the authority of the Ministry of Culture.

2. Teknikum ingenior and academingenior are replaced by diplomingenior with a duration of study of 3.5 years.

### **2. INSTITUTIONAL FRAMEWORK**

Studies for the PhD degree are regulated by the Act on State Education Grants and Loans (No 336 of 2 May 1994) and by Ministerial Order No. 989 of 11 December 1992 on the PhD degree which lays down the general principles of doctoral studies. Individual institutions are free to draw up more detailed regulations, making them available upon request.

No special bodies exist in the country to carry out the management or the administration of doctoral studies. Each institution of higher education decides as to the study programmes it wishes to offer and as to the intake of students. The programmes to be offered are approved by the Ministry of Education.

The twelve Danish universities were the only institutions in Denmark which could award the PhD degree, a situation which has remained untouched following 1 January 1993. But even if the monopoly remains in existence, the twelve are encouraged to strengthen their ties with other research institutions and private enterprises (Ministerial Order on Grants for PhD Students, No. 333 of 27 May 1993 and No. 337 of 2 May 1994). A given PhD programme might take place, part of the time, outside universities, even though the degree would still have to be awarded by a university. In this type of situation, detailed arrangements would have to be worked out between research institutes, corporations, etc., and the enrolling institution would retain responsibility for the completion of the study programme, for sufficient academic quality, for the monitoring of the process leading to the degree, and for the final assessment of the thesis.

The PhD degree is conferred by the university. The universities themselves design the actual diplomas (certificates) which are issued in both Danish and English. Every diploma must include information about the main topic of the thesis, and in accordance with more detailed provisions laid down by the institution concerned, it should also contain information about the study programme, including information about courses and about study periods spent at other research institutions or companies in the country or abroad, etc.

PhD students have always been responsible for covering their own living expenses during their studies and while they are writing their theses. A number of sources of funding have been available to cover these expenses. Thus institutions of higher education have had at their disposal a number of grants. Others have received similar grants from the Danish Research Academy, partly from the Academy's own funds and partly through co-financing from government research institutes, corporations, etc. Grants have also been made by the Danish Research Council. In addition, work-related projects have been facilitated through the

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Danish Academy of Technical Sciences. Finally, some students have worked on their doctorates while holding salaried positions with research institutes or companies.

Under the new scheme, a new type of studentship has been made available through the State Grant Scheme. Within this framework, grants can be made for PhD students enrolled in the three-year study programme which entitle students to 149 portions of the ordinary monthly undergraduate grant. Students who are awarded such grants must also be offered paid employment by the given institution in teaching and/or research corresponding to 840 hours of work over the three-year period.

In addition, the institutions must be subsidized to cover the expenses that they incur in mounting the mandatory study programme prior to awarding the degree, i.e., the costs of supervision, courses and seminars, instruments, travel, studies abroad, etc. (the so-called fare subsidy). The institutions which have been allocated a number of studentships under the State Grant Scheme will also be entitled to a fare subsidy for each student. The size of the subsidy depends on the cost of the type of study programme. Institutions which do not obtain grants from the State Scheme must cover their expenses in other ways. If the institution enrolls students who are externally funded by Research Councils, research institutes, corporations, etc., they will normally be expected to pay a sum corresponding to the fare subsidy to the institution. In any of the cases, enrollment should always be conditional on the availability of resources to carry out a study programme according to the rules. The institution concerned should ensure that the necessary resources are available so that the individual Ph.D. student can carry out the programme in the prescribed way.

### 3. THE ROUTE LEADING TO THE PhD DEGREE

#### 3.1. Admission

The route leading to a PhD degree normally starts after the master's degree (en kandidatgrad), i.e., after five years of university study. But the new system enables universities to recruit students for a PhD course who have not completed a master's degree, provided that the total study programme has the same scope and attains the same level as the traditional path. It is left to universities to design systems of their own which will match their special needs and academic traditions. The following three systems are possible within the framework of the new Order:

- i. 3 + 5 bachelor's degree (en bachelorgrad) and a five-year Ph.D programme;
- ii. 4 + 4 bachelor's degree plus a four-year PhD programme;
- iii. 5 + 3 master's degree and a (conventional) three-year PhD programme.

The amount of time for PhD studies is three years in all cases, but one can start PhD training at an earlier stage and undertake the training at the same time as one proceeds

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with one's master's programme. Hence the PhD degree will in any case be obtainable after at least eight years of university study. The candidate may register for a shorter than three-year period of time if previous activities are deemed to be of equal value in the study programme.

Each institution sets its own enrollment criteria for PhD students. Normally the latter are recruited by individual academics on the basis of personal judgment and funds available. No other factors are taken into account.

### **3.2. Organization of PhD Studies**

PhD studies can be full-time and part-time. The PhD degree may also be awarded without any enrollment if the candidate is seen to have acquired qualifications equivalent to those obtainable through a normal course of study. In such special cases, persons involved in research activities outside universities may draw up and hand in a thesis and have it assessed according to standard procedures and rules .

For each PhD student, the institution appoints one supervisor who is responsible for his or her full study programme. One or more additional supervisors may be appointed from the same institution or from external institutions to supervise the project. Supervisors must be full professors or associate professors in full-time employment or others with similar qualifications within the subject area in question. The universities decide upon the number of postgraduate students which a supervisor may have at one time as well as upon the incentives for supervisory activities. Academics from other countries may also participate in the supervision of a candidate's programme.

The PhD student together with his or her supervisor draws up an individual plan of studies. The student's progress is monitored by the supervisor in the course of personal contacts and assessed every six months. If the study programme does not proceed satisfactorily, enrollment can be cancelled.

### **3.3. Programme**

The programme of PhD studies covers both postgraduate courses and research. During the course period, the PhD student carries out an individualized study programme. He or she should complete with satisfactory results courses corresponding to approximately six months. The composition of the courses as well as the distribution of time among their components are determined by the academic authorities of the universities themselves. The proportion of lectures, seminars, and other activities may differ substantially from one university or speciality to another and is completely within the responsibility of the given institution. No qualifying course examinations are required for any postgraduate courses.

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The student should become a member of active research groups or networks not only at the enrolling institution but also outside this institution, e.g., through stays at other, mainly foreign, research institutions. He or she is required to gain experience in teaching or other forms of knowledge communication, e.g., through the presentation of research results for the institution, company, etc., where the project is carried out. Within the three-year period, the necessary time must be set aside for the realization of the student's own independent research project and for the submission of a thesis.

### 3.4. Dissertation

The outcome of PhD studies is a thesis presented in the national or in a foreign language. The PhD degree is awarded in acknowledgement of the satisfactory completion of a PhD programme including the demonstration, through a publicly defended thesis, of a capacity to carry out a scientific project involving independent use of the scientific methodology of the subject, thereby furthering research at a level corresponding to the international standard of the PhD within the subject area.

Normally the thesis is presented in the form of a monograph.

However, the institution may decide that a thesis based on already published articles may be submitted as a PhD thesis. If any article has been published in collaboration with other authors, a declaration from each of the authors must be attached stating the extent of the PhD student's contribution to the total work. A PhD thesis cannot be submitted jointly by two or more authors. When the thesis accompanied by a satisfactory progress report from the supervisor in charge of the full study programme is submitted, the institution appoints an assessment committee composed of three members who must be full professors or full-time associate professors or hold equivalent qualifications. At least two of the members must come from outside the institution. The supervisor(s) of the student cannot be (a) member(s) of the committee but should take part in its work in a non-voting capacity.

The assessment committee must submit a recommendation as to whether the PhD student, through the publicly defended thesis, has fulfilled the necessary requirements. The committee may require that changes or supplements be added to the thesis prior to the defense.

The institution should determine the venue of the public defense and make the thesis publicly available in due time before the defense. The PhD student is given the opportunity to explain his or her work and to subsequently undergo an examination given by the assessment committee. The person chairing the defense may permit other persons present to make a contribution during the defense.

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Immediately after the defense, the assessment committee submits its recommendation as to whether the PhD should be recommended to the relevant board competent to award the degree. If the committee does not agree on a positive recommendation, the preliminary recommendation of the committee is sent to the candidate who will be given a period of up to two weeks to comment on it, after which the final recommendation is made. The PhD degree is awarded if a positive recommendation has been made by a unanimous committee or by two of the members, or if a positive recommendation has been made by one of the members and a majority of two-thirds of the members of the decision-making collegiate body vote in favour of this recommendation.

### **4. OTHER ROUTES LEADING TO THE PhD DEGREE**

There are no other routes leading to the PhD degree.

### **5. THE DOCTOR'S DEGREE**

The doctor's degree (doktorgrad) is the highest academic degree awarded in Denmark. The degree is named in Latin, and in most cases the title refers to major groups of disciplines, not to individual fields of study: doctor philosophiae, juris, medicinae, etc. A doctoral candidate will normally have been conferred a master's degree and perhaps (but not necessarily) a PhD degree before he or she registers for the doctorate. The universities neither provide courses nor arrange any formal counselling for doctoral candidates. In awarding the doctor's degree, the universities recognize that the person has proved that he or she has considerable scientific knowledge and maturity and has contributed substantially by his or her thesis to science.

### **6. RECOGNITION**

There are no general evaluation criteria or any fixed rules or recommendations for the recognition of foreign doctoral degrees. The universities are completely autonomous in all matters concerning recognition of a foreign doctorate. An academic body at each university decides in every individual case, basing its judgment on its own evaluation of the academic quality of the degree presented.



# FINLAND

## 1. GENERAL INFORMATION

The doctorate is the highest academic degree awarded in Finland. It is an advanced postgraduate degree which normally requires at least four years of study following award of the second cycle master's degree.

There is only one doctor's degree in Finland at the level of the PhD degree. However, there is another postgraduate (pre-doctoral) degree - the licentiate, which follows the candidate degree. Previously, the licentiate was a prerequisite for obtaining the doctor's degree, but according to the new statutory orders, one can go directly from the master's degree to the doctorate.

The system of Finnish academic degrees is presented in the Table below.

Field of study	Number of years elapsed since completion of secondary education							
	3	4	5	6	7	8	9	10
1. Education				K		L		D
2. Humanities				K		L		D
3. Theology	AK			K		L		D
4. Fine arts, applied arts	AK <sup>1</sup>			K		L		D
5. Law	AK			K		L		D
6. Social sciences	AK			K		L		D
7. Economics and business administration				E		L		D
8. Natural sciences				K		L		D
9. Engineering, architecture				DI/A/MA		L		D
10. Medical sciences				L/P <sup>2</sup>		L <sup>3</sup>		D
11. Agriculture, forestry, fisheries				K		L		D

AK - alempi korkeakoulututkinto/lagre hogskoleexamen (lower academic degree);

D - doctor's degree;

DI - diplomi-insinööri/diplomingenjör,

E - ekonomi/ekonom;

K - candidate degree (kandidaatti/kandidat);

L - licentiate degree (lisensiaatti);

MA - maisema-arkkitehti/lanskapsarkitekt;

P - proviisori/provisor;

1 for fine arts and music;

2 for pharmacy;

3 for pharmacy and health care.

**Note:** The licentiates in medicine, dentistry, and veterinary medicine are the basic degrees. In these fields, there are specific professional postgraduate degrees, the Specialist's Degree in Medicine, the Specialist's Degree in Dentistry, and the Specialist's Degree in Veterinary Medicine.

## **2. INSTITUTIONAL FRAMEWORK**

All the postgraduate degrees are regulated by national decrees and university regulations. A separate decree governs each of the twenty fields of study. These decrees define the objectives, extent, and structures of the respective degree course programme and stipulate the minimum requirements for graduation.

The Ministry of Education is charged with the administration of doctoral studies in the country. Both universities and research institutions have the right to set up doctoral studies, a right that is granted by the Ministry of Education. However, only the universities are authorized to confer the doctor's degree. The Ministry of Education and the universities are in charge of policy planning for the specialities offered for PhD studies and for the positions to be made available for doctoral candidates.

Funding for doctoral studies comes mostly from the state budget and the Academy of Finland. The Ministry of Education has channeled funds into the planning and the development of postgraduate education. The Academy finances national systematic research training courses for postgraduate students at the universities. So-called national courses will later on form a part of the normal postgraduate study programmes at the universities, and the primary responsibility for the research training system and its productivity will lie with the universities, even though the Academy of Finland will also support research training courses in the future.

Other sources of funding for doctoral studies are private companies, private foundations, research councils, the loan system, and the students themselves. In addition, doctoral students preparing their theses are often employed by institutions of higher education either as teaching assistants or as teachers paid by the hour or as auxiliary research personnel.

## **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

### **3.1. Admission**

For admission to doctoral studies, the principal requirement is usually a master's degree (the kandidaatti or the maisteri, or the lisensiaatti in the fields of medicine, dentistry, and veterinary medicine) from the institution concerned. A corresponding degree from another Finnish or foreign institution of higher education can usually be accepted as being its equivalent.

There are neither particular restrictions - age, quota of foreign students, etc., nor selection procedures for doctoral applicants.

### 3.2. Organization of Doctoral Studies

Two forms of doctoral studies are possible: full-time and part-time. There is no time limit for doctoral studies. For full-time doctoral students, it is possible to complete a doctor's degree in four years. In many cases, however, the time spent is longer.

Each student has a specially appointed supervisor from the respective university. The supervisor can also be selected from another university or research institute. Complementary supervision from other members of the department concerned or the participation of academics from other countries are also permitted. The qualifications of a supervisor and the number of doctoral students which a supervisor can have at a given time are not specified. A student can meet with his or her supervisor as many times as needed.

A personal study plan that is drawn up for each student is approved by a special committee. Discussions with supervisors and other professors in seminars and formal bodies represent the principal means for directing and assessing the student's academic progress.

During the course of studies, the student has the right to interrupt or to resume studies, to engage in part-time teaching or research, and to do part of his or her required research in other universities or research centres, domestic or foreign.

The award of a doctorate creates no entitlement to future employment and does not lead automatically to any advantages such as a new professional position, a job promotion, or a salary increase.

### 3.3. Programme

In accordance with the requirements regarding PhD degrees, a student enrolled in studies for a doctorate must

- be thoroughly acquainted with his or her specific field of research and its significance and be able to apply methods of scientific research in that field in an individual and critical way so as to produce new scientific knowledge;
- be acquainted with the basic problems, research methods, and historical development of the disciplines relating to his or her specific field of research;
- be adequately acquainted with the theory of science.

The above requirements signify that doctoral programmes integrate both postgraduate courses and research.

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Generally, a student must complete course work, which consists of lectures and seminars, the extent of which is approximately 40 credit units. The particular disciplines and the distribution of the total study time among them are specified by the respective university.

After completion of the course studies, a student must take separate course examinations for each course. The examinations may be both oral and written.

The content of the doctoral programmes in artistic fields (music, industrial arts, theatre, etc.) has certain particularities. For example, at the Sibelius Academy the doctoral degree may be taken with either an artistic or a scientific emphasis:

- i. Doctoral studies in an artistic line require a degree project - an independent artistic work (110 credits), studies supporting artistic work artistic, theoretical, and research studies (34 credits), and a thesis (16 credits) .
- ii. The content of the line of scientific doctoral studies implies a dissertation (110 credits) and studies supporting research - artistic, theoretical, and research studies (50 credits).

In the 1990's, universities began establishing joint programmes leading to the doctorate. In order to systematize postgraduate education and supervision, a graduate school system will be introduced comprising centres of excellence in research and teaching, postgraduate programmes provided by universities, and the necessary back-up network which will also utilize the international postgraduate education potential. The participants in systematic postgraduate education will be selected according to an application procedure.

### **3.4. The Doctoral Thesis**

The requirements for the doctor's degree include the writing of a doctoral thesis and its public defense. The subject must be approved by the supervisor, department, and faculty concerned.

In a doctoral thesis, the student must display profound knowledge of his or her own field of study as well as the ability to independently and critically apply the methods of scientific research and to create new knowledge.

The thesis may take the form of a monograph in the national or a foreign language or of several scientific publications relating to the same unity of issues, and of a summary of them in which the objectives, methods, and results of the study are presented. The publications may also include joint publications, when it is possible to indicate the part which the person concerned has completed independently.

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Before defending the thesis, the candidate should present an abstract of it in the national or in a foreign language and additional publications. The defense of the thesis is advertised in the department, the university, and in newspapers.

An official opponent holding a doctoral degree is appointed. The opponent can be from the same institution, from another university in Finland, or from another country.

An ad-hoc committee is designated by the university concerned for the assessment of each thesis. The committee normally includes two persons with a PhD degree from the awarding department, other departments or universities, and sometimes, but rarely, from another country.

A copy of the thesis must be deposited in the library of the awarding institution and in the national library.

In case of failure on the final defense, the doctoral student may send a written complaint to the faculty which makes a final decision.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctor's degree.

### **5. THE SECOND DOCTOR'S DEGREE**

There is no second doctor's degree.

For some years, the Academy of Finland has financed post-doctoral studies, mainly abroad. The practice has been well received; however, it calls for closer co-operation between Finnish and foreign institutions.

### **6. RECOGNITION OF THE DOCTOR'S DEGREE**

Recognition matters in Finland are based on the Act and Decree on the Qualifications Produced by Foreign Academic Studies, enacted in 1987, which pertains to the qualifications of holders of foreign degrees for public posts in Finland. The Finnish basic degrees are referred to as the master's degree whenever international comparability is desirable. The doctor's degree corresponds to the respective doctor's degree. The first Finnish postgraduate degree, the licentiate, ranks between the basic degree and the doctorate.

The Ministry of Education is responsible in Finland for the professional recognition of foreign academic degrees including the doctoral degree. The Ministry of Education is assisted by the Advisory Council for Recognition of Foreign Studies.-The Council has ten members who represent the Ministry of

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Education, the institutions of higher education, The Ministry of Finance, and the central organizations of the municipalities. The Council may ask for a statement from an institution of higher education regarding the content and the general level of the foreign doctoral degree in question in comparison to the Finnish doctor's degree. The Advisory Council makes statements and submits proposals on recognition matters to the Ministry of Education and the Ministry of Finance, and the former takes the final decision.

An applicant may be requested to pursue Finnish supplementary studies (up to forty credit units) before recognition of equality with the Finnish doctor's degree is granted.

Finland is signatory to a number of international agreements on recognition and equivalence matters. Among them:

- The Convention on the Recognition of Studies, Diplomas, and Degrees Concerning Higher Education in the States Belonging to the Europe Region;
- The European Convention on the Academic Recognition of University Qualifications;
- The European Convention on the General Equivalence of Periods of University Study.

# FRANCE

## 1. GENERAL INFORMATION

Higher education in France has three (DEUG). The second cycle also lasts two years, the first year leading to the licence, the cycles. The first cycle leads, in two years, to the Diplôme d'études universitaires générales second year, to the maîtrise. The third cycle is that of doctoral studies and includes:

- a one-year professional course of study leading to a diplôme d'études supérieures spécialisées (DESS), or
- a course of study, organized in three stages, directed at research including:
  - a one-year initiation to research leading to the diplôme d'études approfondies (DEA);
  - a doctoral thesis prepared in three or four years ending with a defense of the work done and the award of the doctorat.

The award of the doctorat can be followed by another qualification, the habilitation à diriger des recherches, a certification which confirms the aptitude of its holder to implement an original and advanced scientific research project and his or her capacity to train and supervise young researchers. The essential purpose of this diploma is to enable promotion to a full university professorship after success in a competitive examination.

The French higher education diplomas are described in the Table below.

Field of study	Number of years elapsed since completion of secondary education							
	2	3	4	5	6	7	8	9
1. Fine arts	DEUG	L	M	d				D
2. Economics and administration	DEUG		M	d				D
3. Law and political sciences	DEUG	L	M	d				D
4. Economics and management	DEUG	L	M	d				D
5. Humanities and languages	DEUG	L	M	d				D
6. Science	DEUG	L	M	d				D
7. Theory and methodology of physical education and sports	DEUG	L	M	d				D
8. Social sciences	DEUG	L	M	d				D
9. Technology	DEUG	L	M	d				D
10. Medical sciences	PCEM1/2			D	D		D	
11. Engineering				DI/DEA				D
12. Agronomy				DI/DEA				D

## THE DOCTORATE IN THE EUROPE REGION

DEUG - Diplôme d'études universitaires générales;

L - Licence;

M - Maîtrise;

d - DEA;

D - Doctorat;

DI - Diplôme d'ingénieur.

In medical sciences:

*diplôme d'Etat de docteur en medecine: bac + 8;*

*diplôme d'Etat de docteur en pharmacie: bac + 6;*

*diplôme d'Etat de docteur en chirurgie dentaire: bac + 5.*

## 2. INSTITUTIONAL FRAMEWORK

### 2.1. Regulation

Third cycle studies are regulated nationwide. The ministerial order of 30 March 1992 defines the conditions of access to third cycle studies, the organization of programmes, the composition of thesis committees, and the conditions to be met in order to earn the doctor's degree.

### 2.2. Accredited Institutions

Not all higher education institutions are habilitated to award the doctorat. Only universities, the instituts nationaux polytechniques, the ecoles normales supérieures, and the public institutions of higher education mentioned in the amended order of 29 January 1985 are permitted to do so.

Habilitation is granted by the Ministry of Higher Education and Research, within the framework of a contractual policy, for a period of one to four years. This agreement specifies the denomination of the diploma, the field of research, as well as the name of the person in charge.

### 2.3. Planning

Strictly speaking, there is no planning, even if the Minister in charge of research wishes to see an increase in the number of theses presented. A policy to encourage students to study towards a doctorate has been backed by a system of financial grants.

### 2.4. Administration of Doctoral Studies

University research programmes have been completely reorganized at the request of the Direction generale de la recherche et de la technologie of the Ministère de l'Enseignement Supérieur et de la Recherche. This unit, created in 1989, has



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elaborated a policy of incentives consisting of financial contracts with the institutions according to their objectives. Priority is given to training in research by a bonus called the prime d'encadrement doctoral et de recherche, created in 1980, with two objectives:

- to raise the status of teachers/researchers by granting bonuses to all those concerned and by the creation of a grant system for those who involve themselves in administrative duties, in teaching, or in the supervision of theses;
- to create a strong link between academic research and doctoral studies so that the number of doctorate holders will double.

A national evaluation of these objectives has been carried out by a group of experts who focussed their attention on research done by university professors (number of publications) and on the supervision of theses (number of theses).

### **2.5. Receiving a Diploma**

The doctor's degree is conferred by the head of the awarding university upon the successful defense of a thesis or the presentation of the results of substantial research.

### **2.6. Financing Doctoral Studies**

For the preparation of a doctorate, different forms of aid can be granted, the most common being the allocation de recherche granted by the Ministère de l'Enseignement Supérieur et de la Recherche. These allocations are given for a period of two to three years. The candidate must apply during his or her year of DEA studies, be less than twenty-five years old, be a citizen of one of the European Union countries, or have completed an entire programme of studies in France.

Students who receive an allocation de recherche and wish to prepare for an academic career (enseignant-chercheur') may benefit from a complementary grant when they teach one third of their workloads in the first cycle. This programme, called monitorat d'initiation à l'enseignement supérieur, was created in 1989.

The creation of the monitorat system was the result of a double concern:

- to train, in view of future recruitment, the teachers needed by the universities due to the steep increase in the number of students and the retirement of presently employed enseignants-chercheurs.
- to increase the number of graduate students at PhD level in order to fulfill the needs of the economy with regard to young highly qualified graduates.

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The conventions industrielles de formation pour la recherche (CIFRE industrial training conventions for research) are directed at young scholars who wish to work in industry.

The following research institutions offer grants (most of these institutions finance grants for training at the doctoral level):

- The Centre National de la Recherche Scientifique (CNRS);
- The Commissariat à l'Énergie Atomique (CEA);
- The Institut National de la Recherche Agronomique (INRA);
- The Institut Français pour l'Exploitation de la Mer (IFREMER);
- The Institut Français de Recherche Scientifique pour le Développement en Coopération (ORTSOM- the acronym referring to its former name, Office de la Recherche Scientifique et Technique Outre-Mer);
- The Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD).

Specialized grants offered by the Ministère des Affaires Étrangères:

- The Lavoisier programme: about 600 of these grants are offered each year to young researchers who are studying abroad for doctorates.
- The CITERE programme (industrial and technological agreement for study and research abroad in developed and recently industrialized countries).

Grants given by regional administrative bodies: a few Conseils régionaux finance or co-finance grants with research institutions.

### 3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE

#### 3.1. Admission

In order to register for the first year of doctoral studies, one must have a maîtrise, a degree of at least the same level, or a validation of professional experience and personal research.

Permission to study for a doctorate is given by the president or the director of the given institution upon a proposal made by the person in charge of the *école doctorale*, when the latter exists. The registration request must include the opinion of the candidate's directeur de thèse. The candidate must hold a DEA and formally register the topic of his or her research.

#### 3.2. Organization of Doctoral Studies

Studying for a doctorate is preferably done in the *écoles doctorales* (doctoral schools). The écoles doctorales create teams of academics who assist in the

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preparation of one or of several DEA's in a given field of research. They also take part in related studies and participate in the formation of young teams and welcoming teams of young doctorants working in their areas of expertise.

In certain rare cases, several institutions may work together in order to create an école doctorale. Such écoles doctorales are managed by one person appointed by the heads of the institutions concerned upon a proposal made by their scientific councils.

### 3.3. Programme

#### 3.3.1. The Diplôme d'études approfondies (DEA)

The DEA, which is prepared during the first year of doctoral studies, is devoted to an introduction to research. In appropriate fields of research, students are introduced to research techniques through work in a laboratory. Otherwise, the introduction consists of groundwork investigations and internships.

Through a workload which does not exceed 200 hours per year, the student also receives theoretical and methodological training, as well as an initiation to research techniques. The degree is conferred to students who have succeeded in doing the following:

- presentation of a short thesis permitting an evaluation of the ability to do research;
- depending on the subject, success on examinations and in preparing reports on theoretical and methodological studies;
- success on an oral examination permitting an evaluation of the breadth of knowledge of the candidate of the field in which he or she worked for his or her DEA.

#### 3.3.2. The Doctorat

Each doctoral candidate does research under the supervision and the responsibility of his or her directeur de thèse. The work can be individual or collective. Each candidate also takes part in seminars and internships offered by the école doctorale.

The advisable duration of studies for a doctorate is normally three to four years.

### 3.4. Presentation of a Doctoral Thesis

- a) The results of a candidate's research are examined by at least two rapporteurs who have been habilitated to direct and to supervise doctoral

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work. They are chosen by the director of the école doctorale or by the head of the institution. The rapporteurs cannot belong to the doctoral school or to the institution attended by the candidate. Foreign rapporteurs may be asked to examine the doctoral work.

- b) Rapporteurs must express their views in writing. Their reports are transmitted to the head of the institution who will authorize the presentation of the thesis, after consulting the person responsible for the école doctorale (when it exists).
- c) The thesis committee is appointed by the head of the institution. It includes at least three members, among them the directeur de thèse. At least one third of the persons making up the committee must be from other institutions. They are chosen for their competences in the subject. Half of the committee is made up of university professors or persons of equal status.
- d) The presentation of the thesis is public, unless the research is considered confidential. The committee assesses the candidate's work, his or her ability to place it in its scientific context, and the quality of the presentation. When the research is collective, the personal role of each candidate is judged according to an individual written report delivered to the committee.
- e) Whether or not the thesis and/or the results of the research are accepted is determined by the committee after deliberation. The doctor's degree is conferred upon the candidate with one of the following mentions: honorable, très honorable, très honorable avec félicitations.
- f) The president writes a report of the presentation which is signed by all the members of the committee and communicated to the candidate.
- g) The place where the doctorate was presented, the field of study, the title of the doctoral thesis or of the research work, the names and titles of the members of the committee, and the mention obtained by the candidate are indicated on the doctor's diploma.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

Access to doctoral studies can be granted through the validation of a diploma equivalent to the maîtrise or to the DEA or through the validation of work experience or personal research, with the approval of the Conseil scientifique et pédagogique of the institution.

## 5. THE DOCTORATE IN MEDICINE, PHARMACY, AND ODONTOLOGY

The Doctorats d'exercice (professional doctorates), which are required in order to practice medicine, pharmacy, dental surgery, or veterinary medicine do not require the award of a DEA but take much longer to obtain.

### 5.1. The Diplôme d'Etat de docteur en médecine

Medical studies are divided into three cycles:

- the first cycle of medical studies (PCEM) includes two years of general scientific training. In order to pass from the first to the second year, one must pass a competitive examination;
- the second cycle (DCEM) includes four years of study and internships in hospitals;
- the 3rd cycle is open to students who have obtained the DCEM and the certificate of clinical synthesis and therapeutics.

The third cycle of general practice lasts two years and takes place within the framework of the résidanat. It ends with the award of a State medical diploma, the diplôme d'Etat de docteur en médecine, with qualifications in general medicine (Bac + 8).

In order to register for the third cycle of specialized medicine, students must pass a competitive examination called the internat in one of the seven following fields: medical specializations, surgery and medical biology, psychiatry, anaesthesia, labour medicine, and public health. The examination is organized according to the diplômes d'études spécialisées (DES) which are earned in four or five years. The degree granted is the diplôme d'Etat de docteur en médecine to which is added one of the DESs (Baccalaureat + 10 years or Baccalaureat + 11 years, according to the field chosen).

The holders of a general practice degree who wish to go into research may prepare a DEA if they have already earned, for instance, a maîtrise in biology or in medical science.

A special competitive examination (internat) is available to foreign students (except for Andorrans and citizens of the European Union). Candidates must hold a medical degree permitting them to practice medicine in their countries or in the country in which they have obtained their degrees. Success in this competitive examination allows them to prepare a DES.

The same doctors can also, without passing a competitive examination, obtain specialized training in medicine in the scope of inter-university diplomas testifying to specialization in medicine (DIS).

## 5.2. The Doctorat d'Etat en pharmacie

The first cycle is similar to that of medicine. The State Diploma of Doctor in Pharmacy is granted after six years of study. Graduates can do research in conditions similar to those of medical doctors.

## 5.3. The Doctorat d'Etat en chirurgie dentaire

The first year of odontology is identical to that of medical studies (PCEM1). To pass from the first to the second year, one must submit oneself to a selective classification. After five years of study, one obtains the Doctorat d'Etat en chirurgie dentaire.

## 6. RECOGNITION

Each institution is autonomous with regard to the recognition of foreign diplomas. A student who wishes to undertake third cycle studies in a French institution must:

- obtain the agreement of the person in charge of the DEA programme or that of the supervisor of doctoral studies;
- request a validation of studies completed abroad and present a complete file.

A scientific and academic commission convened by the president of the university or by the head of the institution studies the candidate's application and validates the periods of study and, if such is the case, the professional experience of the candidate, according to the rules set by Decree No. 85-906 of 23 August 1985.

In medical studies, the decisions regarding the recognition of foreign diplomas are taken by the Ministry in charge of Higher Education.

## 7. BEYOND THE DOCTORATE

### 7.1. Teaching at a University

In order to take the competitive examination to become a *maître de conférences*, one must have been registered on the list of postulants for this function. According to the number of vacancies, competitive examinations are opened in universities, institutes, or specialized schools to those who hold a doctoral degree or a foreign degree of equal value.

University professors are also selected by a competitive examination which can be taken by those who hold the *habilitation* or a foreign degree of equal value.

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L'habilitation à diriger des recherches is a national certification delivered by a university. The required prerequisite is a doctorate or a foreign degree of the same value. The candidate's file should include either one or several books, published or unpublished, or a collection of research works with a synthesis of his or her scientific activities, demonstrating his or her experience and ability to inspire and to direct research.

# GERMANY

## 1. GENERAL INFORMATION

The doctorate is the highest academic degree awarded in Germany. Admission to doctoral studies, as a rule, presupposes the completion of a lower level higher education course programme.

The traditional and most commonly earned doctoral degrees and their abbreviations are:

<i>Doktor der Philosophie</i> (Doctor of Philosophy)	- <i>Dr. Phil.</i>
<i>Doktor der Naturwissenschaften</i> (Doctor of Natural Sciences)	- <i>Dr.rer.nat</i>
<i>Doktor der Rechte</i> (Doctor of Law)	- <i>Dr.iur.</i>
<i>Doktor der Staatswissenschaften</i> (Doctor of Political Science/Economic Sciences)	- <i>Dr.rer.pol.</i>
<i>Doktor der Ingenieurwissenschaften</i> (Doctor of Engineering Sciences)	- <i>Dr.ing.</i>
<i>Doktor der Medizin</i> (Doctor of Medicine)	- <i>Dr.med.</i>
<i>Doktor der Theologie</i> (Doctor of Theology)	- <i>Dr.theol.</i>

The doctoral degree is comparable to a British or an American PhD degree in the same subject. Reference can be made in this context to the Doctorat (unique) introduced into French universities in 1985.

In order to qualify for a professorship at a university, the Habilitation is necessary. It gives proof of the ability to represent an academic discipline in terms of independent research and teaching. As a rule, the Habilitation is awarded to holders of the doctorate, but this condition is not mandatory. Supplementary academic achievements and original findings must be documented and presented in a publication (Habilitationsschrift). The procedure involved in acquiring the Habilitation qualification is an examination involving the recognition of the Habilitation thesis and a public lecture with an ensuing discussion of the contents of the lecture. The Habilitation documents prove academic achievements. In a number of Lander academic research staff with the Habilitation are entitled to supplement their doctoral titles with habil. (e.g. Dr. med. habil.). The Habilitation gives proof of the teaching



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qualification of the candidate, but does not constitute an academic degree in its own right.

### **2. INSTITUTIONAL FRAMEWORK**

Under the German Constitution (Grundgesetz), the Länder have most of the responsibility for the education system. On the basis of rules made by the Länder, institutions of higher education enact detailed regulations concerning the requirements for the awarding of the doctorate and the Habilitation. Because of the federal structure of Germany, these requirements vary from Land to Land and from one institution of higher education to another.

Doctoral degrees in Germany are awarded by universities, technical universities, comprehensive universities, and teacher training colleges.

No Federal or Länder bodies exist which carry out the management or administrative functions of doctoral studies. According to the laws of the Länder, the higher education institutions themselves are authorized to set up doctoral studies and to confer doctoral degrees. There is no prior planning as to either the number of candidates or as to the specialities to be offered.

The majority of doctoral students do not receive any government grants and must therefore pay for their doctoral studies themselves. Part-time employment as teaching or research assistants is possible.

### **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

Admission to a doctoral programme presupposes an appropriate academic qualification proven on the basis of at least four years of study at a higher education institution of one of the above-indicated types, and as a rule, by an average grade in the degree examination (Diplom, Magister, first State examination). Anyone wishing to complete doctoral studies can apply to the doctoral committee of the department in question, indicating the chosen subject, for admission to doctoral programme procedures.

There are no restrictions regarding doctoral applicants on the basis of age, national minorities, quotas for foreign students, etc. Some institutions may set up numerus clausus restrictions. Selection procedures can be based on average grades in previous studies, interviews, recommendations, and on working experience outside the university. In some institutions, entrance examinations are also required.

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The amount of time which may elapse between completion of undergraduate studies and enrollment in a doctoral programme is limited. It is almost impossible for one to return to a university for a doctorate after a long period in other activities; however, the combination of work experience and research activity can often be very fruitful. Moreover, the highly specialized nature of dissertations is criticized for limiting work opportunities outside the academic world.

### 3.2. Organization of Doctoral Studies

Doctoral studies can be full- and part-time. Hagen University offers the possibility of a distance doctorate. The time needed for completing a doctoral project depends on the amount of work necessary to deal with the subject of the doctoral thesis (dissertation). The project itself and the time needed to complete it are arranged between the student and his or her supervisor at the beginning of the project.

In the engineering sciences, particularly in the field of mechanical engineering and electrotechnics, doctoral students work as scientific collaborators in universities after graduation. In the field of technical and natural sciences, doctoral students usually work on their doctoral dissertations while being employed as scientific collaborators. Doctoral students are often members of research groups. Their theses are linked to their research. During regular or ad hoc work meetings or doctoral colloquies, discussions are held about the results of research and the progress being made with theses.

Relatively few doctoral students are scientific collaborators in research institutes outside universities, such as the Max Planck Institute, the research institutes of the Federal States, etc. Likewise, few of them finance their doctorates by themselves or by means of grants.

Studies are planned individually, and progress is supervised and discussed in doctoral seminars (*Doktorandenseminare*).

During the course of doctoral studies, candidates can interrupt and resume studies, do part-time paid work (teaching, research, etc.), carry out part of their required research in other universities or research centres, either in Germany or abroad, and attend international workshops or short courses as part of their preparation either in Europe or outside Europe.

The drop-out rate is relatively high; however, no statistics exist regarding the question. The reason for dropping out that is most often given is that one has obtained employment outside the university. Other causes are financial and family problems. Moreover, difficulties regarding one's scientific activity, lack of independence, loss of motivation (when the research does not lead to positive results) as well as work overload, insufficient supervision, and lack of communication with the doctoral father can all lead to dropping out.

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The award of a doctorate does not necessarily create an entitlement to future employment in higher education or research, firms, or elsewhere. However, the awarding of a doctoral degree to a candidate who is already in employment in industry, usually, but not automatically, leads to job promotion and salary increase.

### 3.3. Programme

In contrast to what occurs in other countries, doctoral studies in Germany are not part of a formalized programme. A doctoral programme consists either of research only or of graduate courses and research, depending on the institution and the individual.

The route leading to the doctorate as offered by the universities is not primarily one of further study but of scientific/academic work, regardless of whether or not the doctoral student has student status. The meetings of doctoral students are regarded more as communication opportunities between scientists of different qualification levels than learning opportunities.

Study programmes vary from subject to subject for each individual doctoral student and ends with an examination. If the programme includes courses, the amount of time devoted to each of them - advanced courses in the field, auxiliary subjects, research methodology, foreign language, and others - is different from one individual to another. The courses consist mainly of seminars and only rarely of lectures. There are no course examinations.

### 3.4. Dissertation

The following requirements must be met for the award of a doctorate:

- i. completion of a thesis;
- ii. success in an oral examination;
- iii. the printing and distribution of the thesis.

The doctoral thesis is the central element in the process of earning a doctoral degree. The subject of the dissertation must be approved by the supervisor. The dissertation is expected to be a written presentation of independent academic research and must do more than just enumerate established facts and the views of other academic experts. It must represent an original concept, display a correct use of scientific or scholarly methods, offer original research findings, and contribute to the state of academic knowledge in the field.

The dissertation is presented in the form of a monograph. A special committee is appointed by the department to accept the dissertation.

## THE DOCTORATE IN THE EUROPE REGION

Three different kinds of oral examinations are called for in the various sets of regulations governing the awarding of doctoral degrees:

- a) The *Rigorosum* is the traditional form of oral examination. It is an examination covering the entire range of the subject in question. As a rule, one main subject and two subsidiary subjects are covered without reference to the topic of the dissertation.
- b) A form of oral examination that is being used with increasing frequency is the *Disputation*. It consists of a public defense of the dissertation and possibly of positions on subjects in neighboring fields.
- c) The *Kolloquium* consists of a lecture presented by the doctoral candidate on the subject of his or her thesis and an ensuing discussion of the lecture.

The assessment of student performance in the doctoral examination is frequently based on traditional Latin terms; however, German is also used in some cases:

<i>mit Auszeichnung</i>	= <i>summa cum laude</i>	= with highest distinction
<i>sehr gut</i>	= <i>magna cum laude</i>	= very good
<i>gut</i>	= <i>cum laude</i>	= good
<i>befriedigend/bestanden</i>	= <i>rite</i>	= satisfactory/pass

On the completion of the doctoral examination, the doctoral student is required to publish his or her thesis within a certain period of time and must place a certain number of copies at the disposal of the department or the university library for distribution to academic libraries in the country. After fulfilling this requirement, the doctoral diploma is issued, and with it, the doctoral degree is awarded. As of this point, the person in question is entitled to use the doctoral title in the manner indicated in the regulations established by the department.

The titles of new dissertations are published by universities in national scientific publications, but not necessarily accompanied by summaries and comments.

The panel is not allowed to award a lower diploma in case the dissertation is not considered to merit the award of a doctorate; however, outright failure on the final defense rarely occurs.

#### 4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE

There are no other routes leading to the doctor's degree.

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### 5. THE SECOND DOCTOR'S DEGREE

There is no second doctor's degree.

### 6. RECOGNITION

Doctoral degrees obtained abroad are recognized in Germany by the *Länder*. The competent body is the Ministry of Education and Science in the Land in which an applicant lives. In accordance with an agreement, a decision on recognition matters taken in one Land is valid in all *Länder*. An applicant who does not live in Germany must request recognition by the Ministry of Education and Science of the *Land* of Nordrhein-Westfalia, D - 40190 Düsseldorf .

# GREECE

## 1. GENERAL INFORMATION

In Greece, the doctorate, which is the highest academic degree, is considered to be the second stage of postgraduate studies. As a course programme, it requires at least three years of study beyond the award of the Ptychio or the Diploma (in engineering and in architecture).

The system of academic degrees in Greece is shown in the Table below.

Field of study	Number of years elapsed since completion of secondary education					
	4	5	6	7	8	9
1. Education	Pt			D		
2. Humanities	Pt			D		
3. Religion, theology	Pt			D		
4. Fine arts, applied arts	Pt			D		
5. Law	Pt			D		
6. Economics and social sciences	Pt			D		
7. Administration, business, commerce	Pt			D		
8. Exact and natural sciences	Pt			D		
9. Engineering, technology, architecture		Di			D	
10. Medical sciences			Pt			D
11. Agriculture, forestry, fisheries		Pt			D	

Pt - Ptychio;  
 Di - Diploma;  
 D - Doctor's degree (didaktorikon diploma).

## 2. INSTITUTIONAL FRAMEWORK

The organization and operation of postgraduate studies in general and of doctoral studies in particular are governed by Acts No. 1268 of 1982, No. 1566 of 1985, and No. 2083 of 1992 as well as by Presidential Decree No. 380 of 1989.

No national body carries out the management or the administration of doctoral studies. The departments of the universities (Anotata Ekpedeftika Idrimata, AEI) themselves have the right to set up doctoral studies and to confer the doctoral degree. However, some other bodies also take part in setting them up. Any AEI department may submit a proposal with regard to which the General Faculties Council pronounces an opinion. Finally, the Ministry of National Education and Religious Affairs adopts a decision on the proposal. This decision, if favorable, will stipulate that doctoral studies be offered by the department concerned (admission, organization, programme, dissertation, award, etc.).

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Prior planning takes place within the AEI's themselves as to the number of candidates and the specialities offered.

Doctoral studies are financed by the state as well as by research programmes and by the doctoral students themselves. Most AEI's provide financial assistance for doctoral students in the form of university grants.

The route leading to the doctor's degree is described in Section 3.

### **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

*AEI's* establish quotas stipulating the number of places available for doctoral studies; thus admission to doctoral studies is competitive. The general admission prerequisites are the completion of the full course of study at an AEI and a potential for scientific research. Once a postgraduate course programme (the first stage of postgraduate studies) has been implemented in a particular field of study, a diploma awarded for success in such a course may also be required for a student to continue doctoral studies in the field.

Doctoral students are selected from among those applicants who have earned better than average grades in previous studies and give proof of superior abilities to undertake research. No entrance examinations are generally required, but certain university departments have organized such examinations in order to facilitate their selection procedures. The contents of the examinations are general and cover the basic areas of the corresponding fields of study.

The registration of candidates who have obtained the right to enroll in doctoral programmes is carried out by the respective AEI department.

#### **3.2. Organization of Doctoral Studies**

Doctoral studies are full-time with a nominal duration of three years. The actual time period required, however, is usually longer. According to the provisions of Presidential Decree No. 380 of 1989, the period within which a doctoral thesis may be written and submitted for examination may not be less than six nor greater than twelve semesters.

A professor (full, associate, or assistant) belonging to the department concerned is appointed as a supervisor for each doctoral student. In addition, an advisory committee of two or more members for each doctoral candidate is designated. These persons must be members of the teaching and research staff

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of the department concerned or of another university department or be researchers of established reputation.

There are no formal limits as to the number of students who may be supervised by a member of the teaching and research staff at any given time. The number depends on the field of study, the supervisor's other responsibilities, and the quality of the students accepted into the programme. The supervisor is not paid any supplementary salary for this kind of work. The main incentive for the supervisor is the gaining of prestige among colleagues on an international basis. Supervision is also considered to be a part of the teaching and research assignments of university staff members (DEP).

Doctoral students may have meetings with their supervisors as frequently as needed. They may also receive support and guidance from academics from other Greek universities or from outside the country, but the latter case is rare. Joint supervision and single award are permitted as a mode of interuniversity cooperation in the preparation and award of the doctoral degree.

No individual planning of doctoral studies exists. During the period of doctoral studies, a student may interrupt and resume studies, carry out part of his or her required research in other AEI's, and attend international workshops and short courses in the country and abroad. Students are permitted to do part-time tutorial teaching or research at the university in which they are studying.

The award of a doctoral degree entitles its holder to further employment in higher education or research, in industry, and in other fields. A doctoral degree gives rise to a promotion and to an increase in salary.

### **3.3. Programme**

A programme of doctoral studies may include both postgraduate course work and individual research or it may be limited to research. The courses which are to be taken by the students consist of lecture courses and seminars. They are selected by each student after consultation with the supervisor responsible for all the postgraduate courses offered by the department for this purpose.

Students must pass a separate examination for each course selected. The examination can be either oral or written. The number of courses required may vary as determined by each AEI department offering doctoral studies. These courses are devoted to advanced studies in primary fields, relevant subjects, and research methodologies.



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### **3.4. Dissertation**

The preparation and defense of a doctoral thesis is the major requirement for the award of the doctoral degree. The thesis is expected to be an original piece of scholarly work which makes a contribution to knowledge. The topic of the thesis must be approved by the department.

The thesis is presented in the form of a monograph in the national language (Greek). In addition, an abstract of the thesis and personal publications should also be submitted.

The defense of the thesis is the final stage of doctoral studies. It is public and open to anyone who wishes to attend it.

An examining committee is set up for each thesis. The committee is designated by the department and consists of seven members. The following persons may be appointed as members of the committee: DEP members of the department, DEP members of other departments of the same or a different AEI, visiting professors, and professors or scientists of special standing who possess specialized knowledge or experience bearing on the topic of the doctoral thesis.

Three of these seven members are members of the advisory committee if they are DEP members. The regulations also require that three of the members of this committee be full professors in a university.

A doctoral thesis is considered successful when at least five of the members of the examining committee approve it. The degree is awarded by the department at one of its general meetings. In case of failure on the final defense, a student may resubmit his or her doctoral thesis according to the specific rules of the department of the AEI concerned.

A copy of the dissertation must be deposited in the library of the awarding institution and in the national data bank. Further copies of the dissertation are available in photocopy or microfilm form.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctor's degree.

### **5. THE SECOND DOCTOR'S DEGREE**

The possibility of earning a second doctoral degree does not exist in Greece.

## **6. RECOGNITION**

The Inter-University Centre for Recognition of Foreign Academic Titles (DIKATSA) is authorized to deal with the recognition of degrees and academic titles obtained abroad. It was founded by an Act of the Greek Parliament in 1977 and was given authority to deliberate upon and to issue decrees on the recognition of diplomas and academic titles awarded by foreign universities.

Prior to the establishment of DIKATSA, the Greek universities themselves determined equivalences. Since every university used its own criteria for the recognition of degrees, there were many varying classifications for the same degree earned abroad. This situation led to many problems, including the unequal treatment of graduates. Thus the State established a central authority for the recognition of degrees.

The Council of DIKATSA is its principal governing body. It consists of thirteen university professors, and its consent is required for all enactments. The Council members are nominated by the Greek universities and appointed by the Minister of Education and Religious Affairs for three-year terms. Each member is responsible for a specific field of study.

Standing Professorial Committees, consisting of three members, are appointed annually by the Council on the recommendation of the corresponding university faculties. At present, there are thirty-seven Committees, almost one for every type of degree course offered by the faculties of the Greek universities. The role of these Standing Professorial Committees is introductory.

DIKATSA's organization provides for an academic two-way relationship. Through the professors, who are Council or Committee members, knowledge of programmes of study in the Greek universities is brought forth. At the same time, Greek university professors are able to examine foreign university study programmes.

The recognition procedure has three stages. First, a foreign institution is examined with regard to its equivalence, that is, whether or not it fulfills the requirements of an institution of higher learning. Secondly, the equivalence of a foreign university department vis-à-vis similar departments in Greek universities is examined. Finally, the specific programme of studies is examined in comparison to those offered by Greek universities.

An Evaluation Sheet gives the following recommendations with regard to recognition matters. If a foreign institution is considered as equivalent, and the programme of studies that the interested party followed is comparable to that of one or more Greek universities, then the degree is recognized as equivalent to that offered by specific departments of Greek universities (Full Recognition). If the

## GREECE

programme is different from that of a Greek university, the interested party must be examined in specific courses before equivalence is granted (Recognition after Examinations). Finally, if a university is equivalent, but the field of studies is not offered by a Greek university, the degree is recognized as equivalent to that awarded by a Greek university, but with a notation that such a field is not offered by a Greek university (Recognition without Corresponding Field of Study). In instances in which the institution is deemed not to be equivalent to a Greek university, the degree earned abroad is not recognized (Denial of Recognition). If the programme of studies was not completed entirely at an equivalent institution, the degree is not recognized as equivalent, and a supplementary examination must be taken at a Greek university.

Postgraduate and doctoral degrees from institutions that have been examined previously and ranked as equivalent are given recognition by an act of the Council President, without previous committee approval.

The terms used in the recognition procedure are as follows:

- vis-à-vis the university: Institutional Equivalence;
- vis-à-vis the department and the degree: Equivalent;
- and in the case of the field of study: Corresponding.

A university is considered homologous to Greek institutions of higher learning if:

- it is recognized as an institution of higher learning (university) by the authorities in the country of origin;
- It awards doctoral degrees, or its degrees permit their holders to pursue doctoral degrees;
- The faculty hold doctoral degrees or their scientific qualifications are high and internationally acclaimed;
- it provides facilities for scientific research.

A department is considered homologous to corresponding departments at Greek universities if:

- it offers a programme of study at least of the same level to that of a Greek one, and
- the duration of studies is comparable to the corresponding duration in Greek universities.

A degree is considered corresponding if, when granted, it is based on:

- enrollment in a full cycle of studies at a university or at least enrollment in 3/4 of the cycle in the theoretical fields or in 4/5 of the cycle in the engineering and/or the agricultural sciences;
- the condition that the applicant has completed a full programme of secondary education;
- a graduation thesis in the fields of engineering and/or agricultural sciences, and

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- at least one year of studies if seeking recognition at postgraduate level.

Programmes of study that are submitted for recognition are examined by DAKOTAS even if the universities have been judged as homologous.

The list of institutions and departments that are recognized as homologous is published every six months in a special catalogue, the title of which is **Recognized Foreign Higher Education Institutions**.

# HOLY SEE

## 1. GENERAL INFORMATION

This description pertains to ecclesiastical universities and faculties. Ecclesiastical universities and faculties are located in many countries around the world. They foster and teach the sacred doctrine and sciences connected therewith and have the right to confer academic degrees, which are also called canonical, by authority of the Holy See.

This description does not pertain to the Roman Catholic universities and faculties which offer course programmes in secular subjects and follow the academic regulations and practices of the countries in which they are located.

In each faculty, the curriculum of studies is organized in steps or cycles. These are usually as follows: first, general instruction is imparted, covering a coordinated presentation of all the disciplines, along with an introduction to scientific methodology (first cycle); next, one section of the disciplines is studied in greater depth, while at the same time the students are more fully involved in research (second cycle); finally, progress is made toward scientific maturity, especially through a written work which truly makes a contribution to the advancement of knowledge (the third, i.e., the doctoral cycle).

After each cycle of the curriculum of studies, the Appropriate academic degree can be conferred. The academic degrees conferred by an ecclesiastical faculty are: the Baccalaureate (after the first cycle), the Licentiate (after the second cycle), and the Doctorate (after the third cycle). Special qualifications can be added to the names of these degrees.

Academic degrees can be given different names in the Statutes of the individual faculties, taking into account the university practices in the local area, indicating, however, with clarity, the equivalence these have with the names of the academic degrees above, and maintaining uniformity among the ecclesiastical faculties in the same area.

The doctorate is the highest canonical academic degree which normally requires at least two years of study after completion of the Licentiate degree. In some countries, a second doctor's degree is also conferred.

## **2. INSTITUTIONAL FRAMEWORK**

The ecclesiastical universities and faculties throughout the world are governed by the Apostolic Constitution, *Sapientia Christiana*, on Ecclesiastical Universities and Faculties, promulgated in 1979.

Ecclesiastical faculties which are set up or approved by the Holy See in nonecclesiastical universities and which confer both canonical and civil academic degrees must observe the prescriptions of *Sapientia Christiana*, account being taken of the conventions signed by the Holy See with various countries or with the universities themselves.

The authorization to set up doctoral studies is given to the universities and faculties by the Congregation for Catholic Education of the Holy See. All the laws, regulations, and recommendations with regard to all academic studies, including doctoral studies, are laid down in the Apostolic Constitution, *Sapientia Christiana* and in the statutes of the individual universities and faculties.

Academic degrees are conferred by an ecclesiastical faculty on the authority of the Holy See. The conditions under which they are conferred are to be determined in the statutes of the individual faculties, according to the norms laid down by *Sapientia Christiana*.

Doctoral studies can be financed by foundations, agencies, dioceses, religious orders, etc., as well as by doctoral students themselves. Loan systems and sometimes university grants can also be the financing sources for doctoral studies .

The route leading to the doctor's degree is described in Section 3.

## **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

### **3.1. Admission**

Nobody can be admitted to the doctorate unless he or she has first obtained the Licentiate. Only the holders of the Canonical Licentiate qualify for enrollment, in the same field, in the doctoral programmes.

There are no restrictions for doctoral applicants concerning age, national minorities, quota of foreign students, or others.

The selection procedure for doctoral studies is based on the results of entrance examinations and a testimony to the candidate's leading a moral life. Entrance examinations include examinations in the field of specialization and in a

## *HOLY SEE*

foreign language. The Statutes of the faculty define the ways in which examiners are to make their judgments about candidates.

### **3.2. Organization of Doctoral Studies**

There are both full-time and part-time forms of doctoral studies, which usually last two years at least beyond the Licentiate in the same field.

Each student has a specially appointed supervisor, who must be a teacher in the given faculty. There are no restrictions with regard to the number of postgraduate students a supervisor can have at one time. Doctoral supervision constitutes a part of a supervisor's teaching and research assignments. A student can have meetings with his supervisor as many times as needed. Doctoral students can also receive advisory help from other members of the department. It is fairly common that academics from other countries participate in the supervision of a given doctoral student programme.

Individual planning of doctoral studies is maintained and progress is supervised in different ways according to the Statutes of the different institutions.

During the course of doctoral studies, a candidate can interrupt and resume studies, do part-time paid work (teaching, research, etc.), do part of his required research in other universities or research centres in the same or in a different country, and attend international workshops or courses so long as the faculty permits it. This practice, however, is rare.

The Canonical Doctorate is the academic degree which enables one to teach in an ecclesiastical faculty, if admitted by the competent ecclesiastical authorities. The degree does not create any entitlement to future employment and does not automatically lead to a promotion.

### **3.3. Programme**

The Statutes of the individual faculties determine whether or not special disciplines are to be taught along with the research training undertaken and if so, which ones as well as which practical exercises and/or seminars are to be prescribed.

The Statutes of the faculties also define which examinations or which equivalent tests the students must take, whether they are to be written or oral, at the end of the semester, of the year, or of the course, for each course separately, or for all of them together. Likewise, the Statutes determine the value which is to be given to studies undertaken elsewhere, especially in regard to being dispensed from some disciplines or examinations or even in regard to reducing the curriculum, always respecting the prescriptions of the Congregation for Catholic Education of the Holy See.

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For example, a candidate admitted to doctoral studies in the Faculty of Canon Law, who has already earned a doctorate in civil law, may be allowed, according to the judgment of the Faculty, to abbreviate the course, always maintaining, however, the obligation to pass all the examinations and tests required for receiving academic degrees, including the doctorate.

According to the Statutes of some faculties, in addition to the defense of the dissertation, a candidate must pass one or several final examinations referring to the subject of the dissertation and to the related subjects. For the final examinations for the doctorate, outside examiners may be invited to attend.

### **3.4. Dissertation**

A major requirement for obtaining a doctorate is a doctoral dissertation that makes a serious contribution to knowledge.

The Statutes establish the necessary requirements for the preparation of doctoral dissertations and the norms for their public defense and publication. According to these norms, a doctoral dissertation is a written work. At least the principal part of the dissertation must be published.

The basic requirements for doctoral dissertations are the following. A dissertation must be a work of original research achieving scientific results. The work must testify to the candidate's knowledge of the methods of the discipline and of the area of the discipline which has been investigated in the dissertation. The subject of a dissertation must be approved by the University, the Faculty, and the supervisor under whose direction it is written.

The doctoral dissertation must be publicly defended and collegially approved. The defense of the dissertation does not include a requirement for the presentation or the dissemination of an abstract or of any other kind of publication.

A copy of the published dissertation must be sent to the Congregation for Catholic Education of the Holy See. It is recommended that copies also be sent to other Ecclesiastical Faculties, at least those in the same region, which deal with the same discipline.

The defense of the dissertation is advertised in the university and is open to students and to the faculty of the university and to anyone who wishes to attend it.

A special board, designated for each dissertation defense, is appointed by the department or faculty to accept the dissertation. The Statutes and practices of the individual faculties determine the number of persons on each board and the qualifications required. It is not compulsory to have among the members those from outside the faculty or the university. An academic from another country can sit on the board; however, this practice is rare.



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The titles of dissertations with summaries and comments are published in national scholarly publications. A copy of the dissertation must be deposited in the library of the awarding institution and in the library of the Congregation for Catholic Education. In some places, further copies of the dissertation are available in the form of xerox copy, microfilm, or as a printed text.

The diploma which is awarded upon successful completion of doctoral studies and the defense of the dissertation indicate the field of studies and the quality of the performance.

If the dissertation is not judged satisfactory for the award of the doctorate, the candidate cannot be awarded a lower-ranking diploma in its place.

The doctorate, like all other canonical academic degrees, is awarded by authority of the Holy See.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctor's degree.

### **5. THE SECOND DOCTOR'S DEGREE**

In some countries, a second doctor's degree can be also earned.

### **6. RECOGNITION**

The criteria for recognizing foreign doctoral degrees are elaborated as rules. Foreign doctoral degrees can be recognized by the authority of the Congregation for Catholic Education of the Holy See. No foreign doctoral diplomas are recognized automatically. Partial recognition of a foreign doctorate is not possible. No distinction is made with regard to the recognition of a foreign doctorate for purposes of appointment to an academic teaching post, to a research post, or for post-doctoral studies.

# HUNGARY

At present, Hungarian higher education is undergoing transition. Two new laws were approved by Parliament: Law LXXX of 1993 on Higher Education and Law XL of 1994 on the Hungarian Academy of Sciences.

These legal acts are radically influencing doctoral studies and the acquisition of scientific/academic qualifications. Certain changes occurred immediately after the laws came into force; other changes will occur over a longer period. The old system will continue to operate for two more years. Scientific/academic qualification procedures which were initiated before these laws came into force, can be completed as late as the end of 1996. All persons who earned an academic (university or scientific) degree under the old system may continue to use their titles.

It is assumed that for at least a decade the academic community of Hungary will be using both systems in parallel. For this reason, both systems are described below. Much of the text is paraphrased or directly quoted from the two laws.

## 1. GENERAL INFORMATION

The doctorate in Hungary has traditionally been regarded as a stage of post-graduate education leading to the most advanced degrees. Under the old system, there were three levels of advanced degrees:

- the university doctor (*doctor universitatis* - *Dr. Univ.*);
- the Candidate of Sciences (*candidates scientiarum*- *C.Cs.*);
- the Doctor of Sciences (*doctorscientiarum* - *D.Sc.*)

The three degrees had to be earned in the order presented. Each degree required the presentation and the defense of a dissertation; however, the dissertation requirement for each of the advanced degrees was different: the higher the degree level, the more demanding the requirement.

The degree of university doctor was conferred by the universities, and the two succeeding advanced degrees were confirmed by the Scientific Qualifying Commission (translated sometimes as the State Committee on Qualifications).

The new Law On Higher Education introduced a single doctorate, the doctor's degree (PhD), as a university degree, making it the only so-called scientific or advanced degree to be awarded in Hungary. The award of this new degree is the exclusive right of accredited universities. A Government Decree regulates the framework of the process; however, it does not limit the autonomy of the individual universities.

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The new Law on the Hungarian Academy of Sciences has introduced the title of doctor of the Hungarian Academy of Sciences. It can be conferred in recognition of outstanding scientific/academic achievements. The award of this title is the exclusive purview of the Hungarian Academy of Sciences (HAS), which is preparing detailed regulations. It is very probable that the doctor's (PhD) degree will be a necessary prerequisite for this title.

The system of academic degrees in Hungarian higher education is given in the Table below.

Field of study	Number of years elapsed since completion of secondary education									
	4	5	6	7	8	9	10	11...		
1. Education		Di				D1				D2
2. Humanities			Di			D1				D2
3. Fine arts, applied arts				Di				D1		D2
4. Law			Di			D1				D2
5. Economics		Di			D1					D2
6. Exact and natural sciences			Di			D1				D2
7. Engineering, technology		Di			D1					D2
8. Medical sciences				Di				D1		D2
9. Agriculture, forestry			Di			D1				D2

Di - diploma;

D1 - doctor's degree (PhD) as a university degree;

D2 - doctor of the Hungarian Academy of Sciences (HAS).

### Notes (valid in both systems):

1. Graduates in medicine, dentistry, veterinary medicine, and law are granted the professional title of doctor, but they are holders of the first university degree (diploma). The abbreviated forms of these professional titles are dr.med., dr.dent., dr.vet., and dr.jur, respectively.
2. A university - with the prior consent of the President of the Republic - can award the doctorate with the distinction, *Promotio sub auspiciis praesidentis Rei Publicae*, to those who have completed secondary school, university, and doctoral studies with outstanding results.
3. In accordance with the requirements stipulated in the doctoral regulations of a given university, deserving Hungarian and foreign citizens may be awarded honorary doctorates (*doctor honoris causa*).

The Law on Higher Education re-introduced the instrument of habilitation. *Habilitation* was formerly a mandatory requirement for appointment as a university professor. According to the new Law, *habilitation* represents the judgment of a university that the teaching and lecturing ability (*habilitas*) of a candidate is suitable. Anyone who holds a doctoral (PhD) degree may request the opening of a *habilitation* procedure. The applicant shall provide evidence in the manner defined in the regulations of the university concerning his or her teaching, practical, or creative accomplishments following award of the doctor's (PhD) degree. He or she shall prove his or her ability to deliver a public lecture or series of lectures.

The intention is that the doctor's (PhD) degree will be essential for award both of the *habilitation* and the HAS doctor's title; however, at this stage of the development of the new system, the relationship between the two titles is not yet

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clear. Formally and legally, they are independent of each other, but no doubt they will interact mutually.

### **2. INSTITUTIONAL FRAMEWORK**

In the past in Hungary, two types of institutions dealt with doctoral studies: universities, which had the right to award the first level advanced degree (the university doctorate); and the Scientific Qualifying Commission (appointed by the government), which conferred the two subsequent advanced degrees (the Candidate of Sciences and the Doctor of Sciences degrees).

In the case of the universities, the Education Act of 1985 regulated their activities in the domain of doctoral studies. According to the terms of this Act, there was no specialised body to carry out the management or the administration of doctoral studies. The universities themselves were authorized to set up doctoral studies which would lead to the degree of university doctor. The universities were also granted the right to decide as to planning, enrollment, financing, and administration of doctoral studies as well as to the awarding of the university doctor's degree.

Earlier, before 1985, the title of university doctor was not recognized as an advanced degree. Only the degrees of Candidate of Sciences and Doctor of Sciences, awarded by the Scientific Qualifying Commission and its specialised commissions, were counted as such. The latter were awarded independently of the universities. The intention of the Act of 1985 was to bring the advanced research undertaken at universities and that undertaken at the institutes of the Hungarian Academy of Sciences closer together and to do the same with the advanced degrees earned by such work. To this end, the requirements to be met for taking and passing university doctoral examinations were made identical to those of the examinations required for the higher-ranking Candidate of Sciences degree.

The sources of funding for doctoral studies included scholarships offered by foundations, self-financing by doctoral students themselves, part-time employment as teaching assistants, and state scholarships (only for the Doctor of Sciences degree).

According to the new Law, higher education institutions may set up programmes of graduate education, specialised postgraduate education, and doctoral education. «Within the framework of organized doctoral education, or on the basis of individual preparation, universities may award the doctoral (PhD) degree as the highest university qualification.» This degree will certify one's acquisition of knowledge at a high level of the stipulated area of science, one's suitability for undertaking independent research, and the fact that the results of one's research is a contribution to knowledge. In addition, within the framework of organized education or on the basis of individual preparation, the Doctor of Liberal

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Arts degree may be awarded as the highest qualification by an arts faculty or university.

«Auniversity shall be entitled to provide doctoral education and to award the doctoral (PhD) degree in those fields and branches of scholarship in which its suitability has been recognized by the National Accreditation Committee.» The Law defines the concept and process of accreditation as follows: for the ongoing supervision of the standard of education and scientific activity in higher education, and for the perfecting of evaluation, the Government shall create a National Accreditation Committee. One-half of the members of the National Accreditation Committee shall consist of representatives, holding doctoral (PhD) degrees, of the higher education institutions, and the other half shall be representatives, holding doctoral (PhD) degrees, of the scientific research institutes. The members of the National Accreditation Committee and a chairman, elected from its own ranks, shall be nominated by the Minister of Education and Culture and be confirmed in office by the Prime Minister for terms of three years. Mandates may be renewed once. The proposing bodies must ensure that foreign specialists are included among the candidates.

The National Accreditation Committee must approve the areas and branches of knowledge in which a university may conduct doctoral education and award doctoral (PhD) degrees. At the request of the Minister of Culture and Education, the Council, or a higher education institution, the National Accreditation Committee, shall express opinions regarding the following:

- the establishment or recognition of a university or of a college;
- the establishment or elimination of given fields of study;
- the requirements for qualification;
- the doctoral or Habilitation regulations of given universities.

Regularly, at least every eight years, the National Accreditation Committee shall assess the standard of education and of scientific activity in institutions of higher education if so requested by higher education institutions or the Minister of Culture and Education.»

The accreditation of doctoral (PhD) programmes was selected as the first step in the setting up of an accreditation system for Hungarian higher education. A doctoral (PhD) programme is a framework of advanced scientific and educational activity involving university professors, readers, and postgraduate students in a field or a branch of scholarship. It is intended to prepare students for the award of the doctoral (PhD) degree.

A temporary National Accreditation Committee (TNAC) was nominated early in 1993. The twenty Hungarian universities submitted over 254 programme proposals for accreditation which were judged provisionally by this TNAC. Based on these provisional decisions, Hungarian universities began to organize doctoral education in October 1993. The final National Accreditation Committee was

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created in early 1994, thus providing the legal institutional background for accreditation .

Doctoral education is supported by the state through the budget for universities. The student allocation serves to support full-time students of Hungarian nationality who are entering graduate education, are enrolled in specialised further education, or are enrolled in full-time doctoral (PhD) education. The financial support is allocated to the universities which distribute it to individual doctoral (PhD) programmes. There is separate accounting for each doctoral programme. A limited number of doctoral students can receive monthly stipends (presently set at 1.75xA1, in which A1 is the unit of salary grade of public employees). The number of available places is determined by the Minister of Culture and Education, based on proposals made by the Higher Education and Scientific Council. In addition, doctoral students may legally earn doctoral stipends and bench fee support from funds, foundations, donations, and other sources. Tuition fees are determined by the universities themselves. In most cases, these are very low or even non-existent.

### **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

According to the old system, in order to be admitted to doctoral studies, an applicant had to have a university diploma. No other admission requirements (or restrictions) existed. There was neither a selection procedure, nor an entrance examination. The registration of applicants was carried out by the respective university.

The new Law states that: «Every Hungarian citizen has the right... to continue studies at a higher education institution and in fields of studies chosen by him or her.» All persons who hold a university or an equivalent degree may apply for admission to doctoral education. A given higher education institution may set requirements for admission which go beyond those stated above; however, the decision to admit or to refuse admission is made by the doctoral council of the given university.

Experience has so far demonstrated that the number of persons wishing to enroll in doctoral studies exceeds the number of state doctoral stipend places. Accordingly, most universities organize a kind of entrance examination according to which the academic achievements of candidates, their knowledge of foreign languages, and the quality of their first university degrees form the basis of a ranking of candidates.

### 3.2. Organization of Doctoral Studies

In the past, doctoral studies could be both full-time and part-time with a nominal duration of three years. Each doctoral student had a supervisor who was required to be the holder of a Candidate of Sciences or a Doctor of Sciences degree. The number of doctoral students which a supervisor could have at a time was riot limited. The supervision of doctoral students was not the object of additional remuneration; rather it was considered to be a part of the normal teaching and research assignments of a supervisor.

Studies were individually planned and progress was supervised by an appointed supervisor. A doctoral student could have meetings with his or her supervisor as many times as needed. He or she could receive help from other members of the department as well as from academics from other countries, but the latter situation was rare.

During the period of doctoral studies, a student could interrupt and resume studies, do part-time teaching and research, carry out part of his or her required research in other institutions, and attend international workshops or courses as part of his or her training.

The award of the university doctor's degree carried no entitlement to future employment either in higher education and research or in industry, but it improved one's career chances.

According to the new Law, universities wishing to organize doctoral education and to award the doctoral degree must establish a doctoral council. In larger universities, doctoral councils may also be organized for faculties and for certain fields of study. All members of a doctoral council must hold a doctoral (PhD) degree; however, its membership may include persons who are not employed by the given university.

Doctoral studies are going to be organized in accredited doctoral programmes. As was mentioned above, a doctoral programme is an organized framework including course work and research. Each programme is managed by a highly qualified university professor and a programme council. It offers a broad range of courses, seminars, and possibilities for laboratory work. Some of these activities may be mandatory for all participating students; others are optional. Each programme must feature a broad choice of research themes led by qualified researchers (supervisors). The intention and usual practice is that qualified members of non-university research institutions, like those of the Hungarian Academy of Sciences, should be involved in doctoral programmes. A given higher education institution may co-operate with other higher education institutions and with specific research institutes regarding doctoral studies, in the defense of theses and in the conducting of the habilitation process.

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Each student is admitted to a specific programme. As soon as possible, he or she will be assigned a research theme and a supervisor. The supervisor, an active qualified researcher, is mainly responsible for the research activity of the student. The number of doctoral students which a supervisor may have at any one time is not formally limited. This type of work is considered to be a normal part of the supervisor's teaching and research assignments and is therefore not the object of additional remuneration.

The student must earn from twelve to sixteen credits during three years of study. A credit is in principle awarded for fourteen hours of course work per semester, including examinations. Any other educational obligations incumbent on doctoral students will be listed in the regulations of the individual universities.

As stated above, a normal doctoral programme will take three years to complete. Most universities, if not all, organize their course programmes on a semester basis. Each semester consists of about fourteen weeks of courses and several more for examinations. Students carry out research continuously. Doctoral students have twenty-five working days for holidays. They can have meetings with their supervisors as many times as needed. They can also receive help from other members of the department as well as from academics in other countries. During the period of doctoral studies, a student may interrupt and resume studies, do part-time teaching and research, and carry out part of his or her required research in other institutions.

### **3.3. Programme**

In the past, doctoral studies programmes consisted mainly of research. There were no organized doctoral courses. The students worked out their own study programmes under the supervision of appointed tutors.

According to the new Law, programmes of doctoral studies include both course work and research. See details in Section 3.2.

### **3.4. Dissertation**

In the past, when a tutor was appointed, a proposal for the subject of a dissertation was made and submitted for approval, first to the university department and then to the Faculty Committee for Doctoral Studies. After approval of the subject, the student was permitted to begin studies and research resulting in the writing of a doctoral dissertation. A successful dissertation had to display original research and scientific results and demonstrate its author's knowledge of research methodology.

Each dissertation was presented in the form of a monograph in the national or in a foreign language. The title of the dissertation, with a summary, was published



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by the awarding university in national scientific publications. A copy of the dissertation had to be deposited in the library of the awarding institution. Further copies of the dissertation were available in xerox form.

In addition to the defense of the dissertation, there were final examinations (oral and written), the number of which varied according to the chosen discipline.

Upon completion of the dissertation, the Faculty Committee for Doctoral Studies reached a decision as to the composition of the Final Examination Committee and appointed persons from the university holding the Candidate of Sciences or the Doctor of Sciences degrees who would act as opponents at the defense of the dissertation.

The defense of the dissertation, before an academic board, was the final stage of doctoral studies. An abstract of the dissertation or additional publications were not required for the presentation. The defense was open to anybody who wished to attend it.

An academic board was designated for each dissertation by the Faculty Committee for Doctoral Studies. Each one consisted of three to five staff members of the awarding university holding the Candidate of Sciences or the Doctor of Sciences degree.

In case of failure on the final defense, studies could theoretically be prolonged upon request and the defense, repeated. However, there are no records of failure.

According to the new Law, the conditions for obtaining a doctoral (PhD) degree shall be:

- fulfillment of the obligations prescribed in the doctoral regulations of the given university and success on a doctoral examination;
- evidence of independent scientific work in the form of essays or other results;
- proof of knowledge of two foreign languages at levels necessary for study of the given discipline or branch of science;
- the independent solution of a scientific problem, the submission of a doctoral dissertation or a valuable creative work in conformity with the requirements for the degree, and the defense of these achievements in open debate.

«The doctoral examination must be taken before a doctoral examination committee. A doctoral examination committee shall be set up by the doctoral council. At least one-third of the members of a doctoral examination committee must be outside specialists who do not have public employee status at the given university and who do not work for the university in any way.

The doctoral work must be defended in open debate before the committee. The chairman of the doctoral committee shall be a professionally qualified full

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professor of the university. The members of the committee shall be designated by the doctoral council....»

The decision reached by the doctoral examination committee regarding the award of a PhD may only be the object of an appeal in cases involving the violation of university regulations regarding doctoral studies.

No person shall take part in the doctoral procedure who has a relationship of subordination or dependence with the candidate or from whom for whatever reason an objective judgment cannot be expected.

Each university accredited to do so will award doctoral degrees in a ceremony in accordance with tradition. Persons holding the doctoral (PhD) degree may use as a title, alongside their names, the abbreviations Doctor (PhD) or Dr.

A central file will be kept concerning all awards and denials of the doctoral (PhD) degree. The organization of this file shall be the task of the National Accreditation Committee. Its records shall be open to the public.

A Government Decree shall deal with the registration of and the salary increases due to persons awarded the doctoral (PhD) degree, the Candidate of Sciences degree, or the Doctor of Sciences degree and those who acquired the habilitation after the coming into effect of the new Law on Higher Education.

Detailed regulations for doctoral (PhD) degree education and for the awarding of PhD's shall be established by each university accredited to offer PhD programmes.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There used to be no other routes leading to the doctor's degree.

According to the new Law, however, a doctoral (PhD) degree may be obtained through participation in education organized by a university or on the basis of individual research. So far as the second possibility is concerned, all that can be said is that the conditions for obtaining a doctoral (PhD) degree on the basis of individual research are the same as those for persons participating in organized doctoral education, except for the credit requirements. At present, no PhD's are being prepared on the basis of individual research as defined by the new Law.

### **5. THE SECOND DOCTOR'S DEGREE**

The second doctoral degree in Hungary was the degree of Candidate of Sciences. The requirements for it included the prior possession of a first university diploma, success on entrance examinations in the relevant discipline, in philosophy, and in

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foreign languages, and submission of a thesis which had to be assessed positively by a special qualification body. The degree of Candidate of Sciences was then awarded by the Scientific Qualifying Commission.

The degrees of Candidate of Sciences and of university doctor were linked by the fact that a pass on a doctoral examination might be recognized as equivalent if application had been made for the degree of Candidate of Sciences. The holder of a university doctorate might also be awarded the degree of Candidate of Sciences on the recommendation of his or her university. Likewise, the university might confer the degree of university doctor on the holder of a Candidate of Sciences degree .

In line with the new Law, however, no second and third doctor's degree formally exist in Hungary. Concerning the title of doctor of the Hungarian Academy of Sciences and that of habilitation, see Section 1.

### **6. THE THIRD DOCTOR'S DEGREE**

The third and the highest scientific degree was the degree of Doctor of Sciences. The award of this degree indicated that a person who had previously been awarded the degree of Candidate of Sciences had earned a further advanced degree. The procedures for earning this degree were similar to those required in order to earn the degree of Candidate of Sciences. However, the level of research required was much higher and demanded the presentation of a thesis representing a major contribution to the respective field. The thesis had to be assessed by three referees and by a commission appointed by the Scientific Qualifying Commission. The degree of Doctor of Sciences was conferred by the Scientific Qualifying Commission.

The second and the third doctor's degree fell outside the competence of the universities.

### **7. RECOGNITION**

Doctorates awarded by foreign universities can be recognized in Hungary, either in accordance with the provisions of a valid international agreement concerning the country in question, or if such agreement does not exist, by the relevant institutions themselves. However, the procedure for recognition is different in both cases.

In the case of an international agreement, its relevant provisions shall be applied. Recognition is thus automatic and unconditional. If such is not the case because of the lack of an international agreement, a foreign doctorate can be recognized through a nostrification procedure. Universities are authorised by Law

## THE DOCTORATE IN THE EUROPE REGION

to recognize a foreign doctorate by comparing it with its Hungarian counterpart. Full recognition may be made contingent on passing additional examinations.

The recognition of foreign candidates of sciences and doctors of sciences degrees was the prerogative of the Scientific Qualifying Commission.

The principal multilateral and bilateral agreements specifically concerned with doctorates adopted by Hungary are the following:

- a) the Prague Convention of 1972 on the Mutual Recognition of the Equivalence of School Certificates, University Diplomas, Scientific Degrees, and Titles;
- b) the UNESCO Convention of 1979 on the Recognition of Studies, Diplomas, and Degrees Concerning Higher Education in the States Belonging to the Europe Region;
- c) Agreements between the governments of Hungary and certain other countries (Austria, Germany, Spain, India) on university studies and degrees.

Persons holding qualifications in higher education acquired in Hungary may, while abroad, use the following English language titles, with an indication of the area of study:

- those with the college degree, bachelor (abbreviations: BA, BSc, etc.)
- those with the university degree, master (abbreviations: MA, MBS, etc.)
- those with a doctoral (PhD) degree, doctor of philosophy (abbreviation: PhD).

A postgraduate degree obtained abroad may be nostrified as a doctoral (PhD) degree by a Hungarian university if the requirements for the acquisition of the postgraduate degree in question correspond to the requirements, as laid down in Hungary, for the acquisition of doctoral (PhD) degrees or can be made to correspond to them after supplementary requirements have been met.

### **8. RELATIONS BETWEEN THE *OLD* AND THE *NEW* DEGREES**

A university doctoral degree awarded on the basis of the procedure in effect before 1 September 1984 or a university doctoral degree acquired later on the basis of the procedure authorized before that date may continue to be used. A person who acquired a university doctorate (doctor universitatis) degree after 1 September 1984 may continue to use the dr. univ. abbreviation. Holders of the doctor of theology title awarded by theological universities may continue to use the title .

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On the basis of a special request and after individual judgment, and in the event of the fulfillment of the conditions laid down by the university in question, the doctoral (PhD) degree may be awarded to the holder of the doctoral title or degree mentioned above by the university originally awarding the title or degree if the university is entitled to award the doctoral (PhD) degree, or the university may establish the equivalence of it by awarding a doctor's (PhD) degree according to the new Law.

Insofar as this Law mentions a doctoral (PhD) degree as a provision for engagement, employment, or qualification, or insofar as another legal regulation mentions a scientific degree... a doctoral (PhD) degree according to this Law, a Candidate of Sciences degree, a Doctor of Sciences degree, and a postgraduate degree acquired abroad and which is nostrificated or recognized will be understood as being a doctoral (PhD) degree. Persons holding the Candidate of Sciences degree may use the designation doctoral (PhD) degree from the time Law LXXX on Higher Education comes into effect.

# ICELAND

## 1. GENERAL INFORMATION

In Iceland, the doctorate (doktorsprof), which is regarded as a stage of post-graduate studies, is the highest academic degree. It is awarded only by the University of Iceland. The University College of Education is also permitted, by its regulations, to award the doktorsprof, but it has not yet exercised this right.

Two types of doctoral degrees can be earned at the University of Iceland. One is the doctor philosophiae, dr.phil., a degree comparable to the PhD. It is awarded by the Faculty of Arts of the University upon successful completion of a preplanned doctoral programme. This doctorate is an advanced programme of higher education which normally requires three to four years of study beyond award of the MA degree. The doctoral degree is awarded on the basis of the successful defense of a dissertation. Holders of doctorates have the right to use the title, doctor, and to put dr.phil. after their names.

The other type of doctor's degree is designated as doctor followed by the Latin title for the relevant subject field, e.g., doctor scientiarum (*dr.scient.*), doctor medicinae (*dr.med.*), etc. This type of doctorate is the result of intensive independent research and the successful defense of a dissertation.

In addition to these doctoral degrees, the University of Iceland also awards honorary doctorates to mature and established individuals who have made recognized contributions to public knowledge. An honorary doctorate is awarded after recommendation by three quarters of the assembled eligible members of the relevant faculty and with the approval of the University Council. The degree awarded is of two kinds, *Doctor Philosophiae Honoris Causa* and *Doctor Litterarum Islandicarum Honoris Causa*. The University College of Education also awards honorary doctorates to more mature and established individuals who have made recognized contributions to public knowledge. The degree awarded is the *Doctor Educationis Honoris Causa*.

The system of academic degrees in Iceland is shown in the Table below.

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Field of study	Number of years elapsed since completion of secondary education					
	3	4	5	6	7	8
1. Education	BE/BA	BE		MP		D
2. Liberal arts, literature	BA	BA		MA		D
3. Theology	BA	BA	K			D
4. Law			K			D
5. Economics and business	BS	MS/K				D
6. Science	BS	BS	MS	MS		D
7. Medical sciences*		BS		K		D
8. Engineering		FE				
9. Icelandic for foreign students	BPI					

BA	- B.A.-prof;	K	- kandidatsprof
BE	- B. Ed. -prof;	MA	- M.A.-prof.;
BS	- B.S.-prof;	MP	- M.paed.-prof;
BPI	- bacc.phil. Isl.;	MS	- M.S.-prof.;
FE	- Final Examinations;	D	- doktorsprof

\* Including medicine, nursing, physical therapy, pharmacy, and dentistry.

## 2. INSTITUTIONAL FRAMEWORK

Responsibility for doctoral studies as well as for the whole of the higher education sector in the country rests with the state and is for the most part financed from public funds. However, there is neither general legislation for higher education nor national regulations for doctoral studies. Constitutionally, each higher education institution is directly responsible to the Minister of Culture and Education and has its own statutes defining the main role of the institution in education and research, the duration of programmes, the degrees offered, the responsibilities of the institution towards higher authorities, and its internal organization and administrative structure.

Only the University of Iceland and the University College of Education are authorized by law to set up doctoral studies and to confer doctoral degrees. The University of Iceland carries out planning as to the specialities for doctoral studies and draws up and updates doctoral programmes.

Doctoral studies are financed mainly by the state. In addition, a grant system and a loan system can be used by a student as a financing source. Doctoral students can also pay for their studies themselves.

### **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

The admission prerequisite for the doctoral programme leading to the dr.phil. degree is a first class MA (meistaraprof) degree from the Faculty of Arts of the University of Iceland.

There are no restrictions on doctoral applicants concerning age, quota of foreign students, or national minorities. However, admission to the doctoral programme is restricted by numerous clauses fixed by the University. Applicants are admitted according to the results of a selection procedure. The latter is based on the master's thesis and average grades in certain subjects relevant to the study to be followed as well as on personal research, recommendations, and an interview.

Students who have completed a first class M.A. degree from another faculty at the University of Iceland or from another university abroad recognized by the Faculty of Arts may also apply for admission to the doctoral programme. In such a case, in order to be admitted, the applicant may have to pass a special entrance examination .

As to the second type of doctoral degree, it can only be awarded to those persons who have completed a candidatus degree, a master's degree, or the equivalent.

#### **3.2. Organization of Doctoral Studies**

Studies in doctoral programmes are full-time only. The nominal duration of programmes is three years, but sometimes another year is needed to complete studies and to earn the degree.

Each student has a specially appointed supervisor, a doctor's degree holder. A supervisor can have more than one doctoral student at a time, and a student can have meetings with his or her supervisor as frequently as needed. Supervision of a doctoral student usually constitutes a part of the supervisor's own teaching and research assignments. A supervisor is not normally paid extra for this work which is considered prestigious. The supervisor is responsible for coordination and guidance of doctoral study. He or she meets with the student and assists in the planning of the programme of coursework, seminars, and research, monitoring the progress made in the individual programme of study. The progress of the student is also discussed in seminars and by the academic council of the Faculty. Doctoral students can also receive advisory help from other members of



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the Faculty. The participation of academics from other countries in the supervision of doctoral programmes is permitted. Joint supervision and single award (sometimes with mention of co-operation on the certificate) is usually used as a mode of interuniversity co-operation in the preparation and award of doctorates.

During the period of doctoral studies, a student can interrupt and resume studies, do part-time paid teaching and research, carry out part of the required research in other universities or research centres, and attend international workshops or short courses in Iceland and abroad in the framework of his or her training. Foreign students are also offered these possibilities and opportunities.

The award of the doctoral degree does not create any entitlement to future employment either in higher education and research or in industry. However, the award of a doctoral degree to a candidate already in employment leads to a salary increase.

### **3.3. Programme**

The programme leading to the dr.phil. is a special programme of studies in Icelandic literature, Icelandic language, and Icelandic history. The course programmes consist of lectures, seminars, essays, major research work, and a thesis. There are both obligatory courses and courses to be selected by the student and to be accepted by the supervisor. One year is devoted to obligatory studies and research abroad at a university recognized by the faculty. Written (and in some cases oral) subject examinations and assessments are held at the end of each semester throughout the programme in keeping with the contents of the courses taken and the essays written by the student. The main work is the preparation of the doctoral thesis based on the research done during the whole period of studies.

The programme of the second type of doctorate is not a taught or a pre-planned programme and consists only of research. This type of doctor's prof is the result of intensive independent research and is an expression of recognition of the fact that the recipient possesses significant scholarly insight and maturity and has produced a true step forward for science through his or her dissertation.

### **3.4. Dissertation**

The subject of the dissertation chosen by the student must be approved by the supervisor and the Faculty. The dissertation should be the outcome of individual research conducted according to competent research methods and techniques. In order to be judged satisfactory for the defense, the dissertation and the scientific results it establishes should constitute an original contribution to knowledge in the chosen discipline.

## *THE DOCTORATE IN THE EUROPE REGION*

The dissertation is submitted to the Faculty in the form of a monograph in the national language. It is also necessary to present an abstract of it in the national or a foreign language which is to be disseminated in the country to concerned institutions. A committee appointed by the Faculty decides whether or not the submitted dissertation meets the requirements with regard to the content and form.

The oral defense of the dissertation is compulsory. It is advertised at the given Faculty of the University and elsewhere. It is public and open to all those who wish to attend it. A special committee appointed by the Faculty to evaluate the dissertation also takes part in the defense. It consists of three persons, all doctor's degree holders from the faculties of the University of Iceland or from other universities in the country or abroad. Two official opponents, also doctor's degree holders, are appointed for the defense procedure. Both an examining committee and official opponents are designated for each dissertation. The task of the committee is to determine whether or not the dissertation is satisfactory and whether or not the candidate defended it successfully and should thus be granted the doctor's degree.

A copy of the dissertation is deposited in the library of the University. The titles of dissertations are published by the University in national scientific publications.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There is no other route leading to the doctor's degree.

### **5. THE SECOND DOCTOR'S DEGREE**

There is no second-level doctor's degree.

### **6. RECOGNITION**

The criteria for the recognition of foreign doctoral degrees are elaborated in the form of recommendations. Foreign doctoral degrees are recognized by the state accrediting agencies and by the universities. No distinction is made between the recognition of a foreign doctorate for purposes of appointment to an academic teaching post or to a research post. Partial recognition of a foreign doctorate is not possible. Foreign doctoral diplomas are not automatically recognized.

# IRELAND

## 1. GENERAL INFORMATION

The doctorate is the highest academic qualification awarded in the Republic of Ireland. No formalized teaching programmes leading to the award of a doctorate are available at Irish third-level institutions. The Doctor of Philosophy (PhD) degree, Doctor in Letters (DLitt), Doctor in Science (DSc), etc., may be obtained only by research.

The standard required for acceptance to candidacy for the Doctor of Philosophy is generally a high level of academic attainment in the primary degree and evidence of an aptitude for research. Doctorates are awarded to candidates who have distinguished themselves by original research in their fields.

For the purposes of this chapter, consideration will be given to the Doctor of Philosophy degree only. A minimum of three years of study is normally required for completion of the Doctor of Philosophy degree, and candidates are allowed six years from the date of registration to complete their theses.

The Doctor of Philosophy degree (PhD) may be obtained in most fields of study at universities and at institutions in which awards are validated by the National Council for Educational Awards (NCEA). The degree, which is earned by research only, is generally not taken until six terms after completion of the Master's degree, but in special cases candidates may be permitted to take it six terms after the primary degree.

The system of degrees in higher education is portrayed in the Table below.

Field of study	Number of years elapsed since completion of secondary education						
	3	4	5	6	7	8	9
1. Arts	B	B,M	M	D	D		
2. Education		B		M	D		
3. Art and design		B		M	D		
4. Economics and social studies		B		M	D		
5. Social science	B	B,M	M	D	D		
6. Communication and information studies	B	B	M	M,D	D		
7. Commerce	B	B	M	M,D	D		
8. Science	B	B,M	M	D	D		
9. Engineering		B	M	M	D		
10. Architecture			B	M			D
11. Medical sciences							
medicine				B	M		D
dentistry			B				
veterinary medicine			B	M			D
12. Agricultural science and forestry		B	M		D		

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- B - Bachelor's degree;
- M - Master's degree;
- D - Doctor's degree.

### 2. INSTITUTIONAL FRAMEWORK

No national regulations exist for doctoral studies in Ireland; however, the awarding bodies have their own regulations. The doctoral degree is offered by the National University of Ireland (NUI)<sup>1</sup>, the University of Dublin<sup>2</sup>, the University of Limerick, Dublin City University, and the National Council for Educational Awards (NCEA)<sup>3</sup>.

It is the responsibility of heads of departments within institutions to ensure that the research chosen can be effectively undertaken in their departments and that sufficient resources and a suitable supervisor can be provided for the period of the research, study, and writing. Each head of department must be satisfied that suitable facilities are readily available for each candidate. Facilities include the general research environment, supervision, instruction in research methods, access to libraries and other information resources, and where appropriate, advanced courses in special topics.

The number of candidates is dependent on the quality of the applicants, the resources within the institution, and the availability of financial support for students. The financing of doctoral students comes from enterprises, companies, firms, and doctoral students themselves. Loan systems and part-time employment of students as teaching assistants are also practiced.

### 3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE

#### 3.1. Admission

Candidates for admission to programmes of study leading to the award of the PhD degree shall normally be expected to have completed the Master's degree or have

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- 1 The National University of Ireland comprises three constituent colleges (University College Dublin; University College, Cork; and University College, Galway). St. Patrick's College, Maynooth, is a recognized college of the NUI. The NUI is also the awarding body for a number of other recognized colleges.
  - 2 Trinity College, Dublin, is the sole constituent college of the University of Dublin. The University of Dublin is the awarding body for several degree courses in the Dublin Institute of Technology and some colleges of education.
  - 3 The National Council for Educational Awards (NCEA) was established on an ad hoc basis in 1972 and subsequently placed on a statutory basis in 1980. Among its principal functions are the approval and recognition of courses in the National College of Art and Design and the Regional Technical Colleges. It also validates a wide number of courses in the Dublin Institute of Technology and makes awards in a number of independent (private) colleges.

## IRELAND

made satisfactory progress towards obtaining it. Exceptionally, candidates may register directly for the PhD degree but must hold a first class honours primary degree in a related subject and must show substantial reason for not registering for the Master's Degree. Candidates with a professional qualification and an exceptional level of experience and work achievement may be accepted for a programme of research leading to the PhD degree.

The programme of research leading to the degree of Doctor of Philosophy will normally be of a minimum of two years and a maximum of six years of duration. An application for transfer from the Master's programme to a course of research leading to the PhD degree may not normally be made less than one year after the Master's registration date.

The university or institution offering the doctorate will ensure on admission that the candidate possesses or will possess the required entry qualifications, that the relevant expertise and facilities are available within the institution to support the research programme indicated, that there are adequate arrangements for supervision, and that the research programme is appropriate for the award of the doctorate.

When selecting candidates, the Master's thesis, average grades in previous studies, professional experience, personal research, interview, and recommendations can be considered.

### **3.2. Organization of Doctoral Studies**

Applicants are required upon registration for a course of study and research for the degree of Doctor of Philosophy to state the subject of their research. Each subject proposed must be approved by the head of the school or faculty to which it pertains, who must also be satisfied that each applicant is qualified to undertake the research stated to the level of the doctorate. The application shall be submitted, on the recommendation of the head of the faculty or school, to the Academic Council in the relevant institution.

Each doctoral student is assigned a suitably qualified supervisor whose responsibility is to supervise him or her on a regular and frequent basis. The supervisor should normally be a head of department, senior lecturer, or other staff member of doctoral status, who is a specialist in the subject area concerned. Additional suitably qualified supervisors may be appointed if necessary. The number of registered candidates per academic supervisor should not normally exceed three. A supervisor does not earn additional salary for acting as a supervisor, for the supervision of research students is part of his or her employment contract in terms of fulfilling his or her teaching and research obligations.

Doctoral students work according to their individual plans. The progress made is discussed with supervisors and in seminars. Students undertaking the degree of

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Doctor of Philosophy may interrupt and resume their PhD studies, but doing so is not usually recommended. Candidates may attend international conferences or workshops or carry out part of their required research in other colleges but under stringent supervision. Students may also engage in part-time teaching during the course of doctoral studies.

The award of the doctorate does not create any entitlement to future employment in Ireland. Although employment is obtained through open competition, the award of the Doctor of Philosophy degree would indicate a high calibre of the applicant.

### **3.3. Programme**

A substantial thesis making a significant original contribution to knowledge is the primary element assessed for the award of the Doctor of Philosophy degree. An oral defense of the thesis (*viva voce*) and demonstration of the candidate's research achievement constitutes a significant part of the assessment leading to the award of the degree of Doctor of Philosophy.

A good honours primary degree and a Master's degree should provide the basic methodological competence and relevant knowledge in the broad discipline in which the doctoral work is to be carried out. However, in some cases further preparation beyond the preliminary period of study and background research may be necessary to prepare the candidate for the research programme. Candidates may be required to pursue appropriate prescribed coursework, with final registration for the degree of Doctor of Philosophy being made when the coursework is satisfactorily completed. The content of the prescribed coursework may include research methodology, report writing, foreign language skills, computer skills, or mathematical and statistical skills, as appropriate.

### **3.4. Dissertation**

Candidates for the degree of Doctor of Philosophy are assessed on the basis of a written thesis and an oral examination. Each candidate is examined by at least one internal and one external examiner. The external examiner will be independent of the sponsoring institution. The examiners consult with one another and make their reports after the thesis has been submitted and the oral examination has taken place. Each examiner delivers a report on the outcome of the candidate's examination. A candidate who fails to satisfy the examiners during a first examination may be allowed to revise his or her thesis and be re-examined not more than once. The reports of the examiners are submitted to the Senate for NUI students, to the NCEA, or to the relevant university committee for approval.

A doctoral thesis must show evidence of independent enquiry, originality in the methods used and in the conclusions drawn, and must make an appreciable

## *IRELAND*

contribution to knowledge in the candidate's field. If the dissertation is not considered to merit the award of the degree of Doctor of Philosophy, a Master's degree may be awarded.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctor's degree.

### **5. THE SECOND DOCTOR'S DEGREE**

There is no form of second doctoral degree in Ireland.

### **6. RECOGNITION**

There is no national policy in Ireland regarding equivalences of qualifications earned abroad. The evaluation of qualifications gained abroad for the purposes of acquiring admission to a third-level educational institution is undertaken by the institutions themselves. The institutions, as autonomous entities, have the right to determine whether foreign qualifications are equivalent to the Irish qualifications required for admission.

Persons holding foreign qualifications and who wish to practice a profession or trade in Ireland will generally be required to submit a transcript of their award to the relevant professional organizations for assessment. These professional and trade organizations have their own criteria for determining whether or not the foreign award meets their requirements and whether or not the person may practice the profession or trade.

The National Academic Recognition Information Centre (NARIC) was established in 1984 and acts as an information point supplying general information to foreign students. The Centre does not take decisions as to the recognition of foreign qualifications. As mentioned previously, decisions as to the recognition of foreign qualifications are dealt with on an individual basis by the college authorities after consultation with the faculty within the college concerned. NARIC serves to further the mandate of the European Union to facilitate the international mobility of students.

# ITALY

## 1. GENERAL INFORMATION

The doctorate (*dottorato di ricerca*), the highest academic degree awarded in Italy, is considered to be a stage of postgraduate studies. It was established by Presidential Decree in 1980. This degree is only of significance within the sphere of scientific-academic research and of value only for research activity (both public and private) and not for teaching and professional careers.

The doctorate is an advanced programme of higher education which normally requires a minimum of three years after award of the laurea degree spent in a university department carrying out a scientific research programme.

The laurea degree entitles its holder to use the title of *Dottore/Dottoressa* (shortened to *Dott./Dott.ssa*), which corresponds to a second level university qualification, not to be confused with the British PhD, the French Doctorat, or the German PhD, all third level degrees the titles for which are shortened to Dr. in the Italian system, the dottorato di ricerca is what actually corresponds to most European and non-European doctorates. It is a third level university degree conferring the title of *Dottore di ricerca*, for which no official abbreviation has yet been determined. It could be Dr.

The system of academic degrees in Italy is presented in the Table below.

Field of study	Number of years elapsed since completion of secondary education								
	2	3	4	5	6	7	8	9	
1. Education		DU	L			Di	D		
2. Humanities	DU	DU	L		Di	Di/D			
3. Fine arts			La						
4. Architecture		DU		L		Di	Di/D		
5. Law, political, and social sciences	DU	DU	L		Di	D			
6. Economics		DU	L		Di	Di/D			
7. Exact and natural sciences (except chemistry, biology, and geology)		DU	L		Di	D			
8. Engineering, biology, chemistry, and geology		DU		L		Di		D	
9. Medical sciences									
medicine		DU			L		Di	Di/D	
dentistry	DU			L			Di/D		
pharmacy				L					
veterinary medicine		DU		L		Di	Di/D		
10. Agriculture, forestry		DU		L		Di	Di/D		
11. Psychology		DU		L			D	Di	

- DU -diploma universitario (the first level university degree preparing for certain professions);  
 L - laurea (the second level university degree);  
 La - licenza accademica delle belle arti;



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- Di - diploma di specialists (professional qualification granted after the laurea degree, i.e., the third level university qualification with a professional feature);
- D - dottorato di ricerca (doctor's degree, i.e., the third level university degree with a merely academic character).

### 2. INSTITUTIONAL FRAMEWORK

Doctoral studies are regulated by Law No. 28 of 21 February 1980 and Directive DPR No. 382 of 11 July 1980.

No national body exists which carries out the management or the administration of doctoral studies. Universities themselves are authorized to set up doctoral studies but, the right to do so is granted by the Ministry of Universities and Scientific and Technological Research. The Ministry also confers the research doctor's degree. The doctoral programmes are carried out through institutions of higher education, previously determined by the Ministry, in which either strongly specialized subjects or interdisciplinary research activities are developed.

There is prior planning both as to the number of candidates and of specialities. Every year, the Ministry of Universities and Scientific and Technological Research determines the number of places available for doctoral candidates proceeding from the available funds, equipment, and staff necessary for doctoral studies.

Doctoral studies are financed by the state.

### 3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE

#### 3.1. Admission

Admission to a doctoral degree programme is competitive. The general prerequisites for admission are the completion of a full course of study at an institution of higher education (a laurea) and a demonstrated potential for scientific research. Relevant laurea are listed in each case; usually a laurea in the subject for which a candidate is applying is required.

Applicants sit for a competitive entrance examination in the subject of specialization. Through the entrance examination, which consists of a written paper and a viva voce, the aptitudes of doctoral candidates for scientific-academic research are established.

The registration procedure of the candidates who have obtained the right to enroll in doctoral programmes is carried out by the respective higher education institutions .

### **3.2. Organization of Doctoral Studies**

Doctoral studies are full-time with a nominal duration of three years as of the award of the laurea, but the actual time is usually longer.

A full or associate professor specializing in the subject area is appointed as a supervisor for each doctoral student. The supervisor guides the student's research and makes suggestions with regard to the preparation of a thesis. At the end of each year, students submit a detailed report to their supervisors who assess the progress made.

The number of students a supervisor can have at a given time is not limited and depends on the field of study, his or her other responsibilities, and the quality of the students accepted into the programme. Such supervisory tasks are not remunerated separately but are considered to be a part of a supervisor's teaching and research load.

Doctoral students can have meetings with their supervisors as many times as needed. They can also receive help from other members of the institution as well as from academics from other countries. Joint supervision and single award are permitted as a mode of inter-university co-operation in the preparation and award of the doctor's degree.

Usually, postgraduate students submit their individual study plans to their supervisors who monitor the progress made. Upon enrollment, a doctoral student may be awarded a research grant.

The research doctorate degree is an academic qualification, valuable exclusively as an aid in carrying out further scientific research. Therefore, it leads to continued employment in the given field or discipline.

### **3.3. Programme**

The programme of doctoral studies includes both postgraduate courses and individual research on subjects chosen beforehand by each candidate. The courses which are to be taken by each candidate consist of lectures and seminars and are devoted to the subject of specialization.

Each student must pass a qualifying examination in the subject area, which can be oral or written, or sometimes both.

### **3.4. Dissertation**

The submission and defense of a dissertation are the major requirements for the award of the doctoral degree. The dissertation is required to reflect original research which produces a significant contribution to knowledge.

The dissertation is presented in the form of a monograph in the national language. No abstract of the dissertation or publications need be submitted in addition to the dissertation.

The defense is held before a national commission set up by the Ministry of Universities and Scientific and Technological Research for the given field or discipline. The national commission is a standing body with a term of office of one year and consists of three full professors.

The commission evaluates the results obtained in the work undertaken for the research doctorate and formulates a judgment in a reasoned report. The final decision as to award of the degree and the title of *dottore di ricerca* is made by decree of the Ministry of Universities and Scientific and Technological Research.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the Italian research doctorate.

### **5. THE SECOND DOCTOR'S DEGREE**

The possibility of preparing a second doctor's degree does not exist in Italy.

### **6. RECOGNITION**

In conformity with the Presidential Decree (DPR 11 July 1980, No. 382, Art. 74) of 1980, those persons who have earned research doctorates or similar academic titles at foreign universities may apply to have them recognized in Italy. Legally, the responsibility is that of the Ministry of Universities, to which applicants must forward their applications along with supporting documents.

The latter must include certificates attesting to research or any other activity (i.e., attendance of courses within doctoral programmes, etc.) undertaken and completed at foreign universities after a study period of at least three years.

If an application is accepted, recognition is granted - after approval by the National University Council (CUN- Consiglio Universitario Nazionale) - by a decree of the Minister of Universities stating the equivalence of the foreign doctorate to the Italian *dottorato di ricerca* in a corresponding field.

## *THE DOCTORATE IN THE EUROPE REGION*

Presently, the possibility of obtaining such recognition is restricted to Italian citizens. This restriction reflects the fact that the possibility of recognition was intended to promote the doctoral studies and research accomplished by Italians abroad in such a way that the whole national community might collectively benefit from such activities.

# MALTA

## 1. GENERAL INFORMATION

The degree of Doctor of Philosophy is the highest academic qualification awarded in Malta. As such it is regarded as the final stage of postgraduate studies. PhD degree programmes are offered only at the University of Malta.

The doctorate is an advanced programme of higher education aimed at in-depth research in the selected field. Earning the doctor's degree requires at least three years of full-time study following award of a master's degree.

The system of academic degrees in higher education is presented in the Table below.

Field of study	Number of years elapsed since completion of secondary education							
	3	4	5	6	7	8	9	10
1. Education		B(H)		M				
2. Arts	B	B(H)	M			D		
3. Theology			B		M			D
4. Architecture			B(H)/P					
5. Law	B			D/P				
6. Accountancy			B(H)					
7. Administration		B(H)		M				
8. Business, management		B(H)		M				
9. Engineering		B(H)/P						
10. Medical sciences								
medicine				D/P				
dentistry		B(H)/P						
pharmacy		B(H)						

- B - bachelor's degree;
- B(H) - bachelor's honours degree;
- M - master's degree;
- D - doctor's degree;
- P - professional qualification.

**Note:** In medicine and law, the title of doctor, obtained after five and six years of study respectively, is a professional qualification.

## 2. INSTITUTIONAL FRAMEWORK

There are neither national regulations for doctoral studies nor a national body in the country to carry out the administration or management of doctoral studies. The

## *THE DOCTORATE IN THE EUROPE REGION*

Education Act, passed by Parliament, authorized the University to set up doctoral studies and to confer the doctor's degree.

The University carries out prior planning as to the specialities and the number of candidates to be accepted for the proposed doctoral programmes.

The financing of doctoral studies can come from different sources: the state, the University (in the form of grants), and the employers of students. Part-time employment as teaching or research assistants may also be provided.

### **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

The major prerequisite for admission to a doctoral programme is excellent performance in a course programme leading to the master's degree. No restrictions or quotas are fixed or practiced for doctoral applicants.

The selection of applicants is based on the quality and relevance of their masters' theses, recommendations, the results obtained in personal research, and practical experience outside the university. Entrance examinations are not envisaged as part of the selection procedure.

#### **3.2. Organization of Doctoral Studies**

There are two forms of doctoral studies: full-time and part-time. Their duration is a minimum of the equivalent of three years of full-time studies, but the actual time required to submit the thesis is usually longer.

Each student has a specially appointed supervisor, a holder of a doctorate in the given field of study. A supervisor normally has a maximum of three postgraduate students at a time. Supervisory work constitutes a part of the teaching and research assignments of a university professor. It is considered prestigious because it leads to the highest academic qualification. A student has regular meetings with his or her supervisor and may also consult other members of the department.

The participation of academics from other countries in the supervision of the given candidate is also possible. This practice is encouraged.

During the course of doctoral studies, students, both national and foreign, can interrupt and resume studies, do part-time paid work, mainly teaching and research. They may also carry out part of their required research in other universities or research centres in the country or abroad. Doctoral students may also attend international workshops or short courses as part of their preparation, both in Europe or elsewhere. This practice is fairly common.

## MALTA

Doctoral studies are individually planned. Progress is monitored by each supervisor and discussed in the faculty.

The award of a doctorate does not create any entitlement to future employment, but it can lead to job promotion and salary increases for new doctorate holders already in employment.

### **3.3. Programme**

The programme of doctoral studies consists mainly of research. No post-graduate course lectures are delivered.

### **3.4. Thesis**

The outcome of the doctoral programme is a thesis. The subjects of theses in different fields are recommended by the respective departments and faculties and approved by the Senate of the university. A thesis can be presented in the form of a monograph or series of contributions in any appropriate language. The thesis must be based on original individual research. It should reflect expert knowledge and research methodology.

The defense of the thesis is a compulsory prerequisite for obtaining the PhD degree. Before defending the thesis, the postgraduate student is required to present an abstract of it in English which is disseminated both in Malta and abroad to the institutions concerned. Additional publications on the subject and other materials related to the thesis do not need to be submitted.

The defense is not public even though it is advertised in the university and the department. It takes place before a special board which is appointed by the university for each thesis. The board is entitled to accept or to reject the thesis and, if it accepts the thesis, to decide on the procedure of the defense. Three members - academics, doctorate holders - sit on the board. At least one member of the board must be from outside of the awarding university. Academics from foreign countries can sit on the thesis defense boards.

A copy of the thesis must be deposited in the library of the awarding institution. Further copies of the thesis are available in the form of Xerox or microfilm. The titles of theses with summaries and comments are published by the University of Malta in national scientific publications.

Insofar as a thesis is normally submitted for defense only when the research involved is deemed positive in every respect, the question of follow-up activities does not arise.

#### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctorate.

#### **5. SECOND DOCTOR'S DEGREE**

The structure of doctoral courses leads to the award of a one-level degree. It is not a two-tier structure.

#### **6. RECOGNITION**

There are no rules or recommendations laying down the criteria for the recognition of foreign doctoral degrees. These are recognized by the University of Malta or professional bodies on a reciprocal basis.

When recognizing a doctorate for purposes of appointment to an academic teaching post or to a research post, a distinction is drawn between a professional doctorate and an academic (research) doctorate. The partial recognition of a doctorate is not possible. PhD degrees awarded by universities in European, Commonwealth, Mediterranean, and North American countries have been given general recognition.



# THE NETHERLANDS

## 1. GENERAL INFORMATION

The doctorate is the highest academic degree awarded in the Netherlands. Preparation for this degree takes at least four years following completion of a course programme at a university or *hogeschool* (*hogescholen*, known in the Netherlands as HBO, offer higher professional education). In practice, the actual number of years necessary to finish a doctorate is longer.

The Dutch system of academic degrees is presented in the Table below.

Field of study	Number of years elapsed since completion of secondary education				
	4	5	6	7	8
1. Education Secondary teaching qualification (highest level)	Bc*/Drs				Dr
2. Agriculture and natural environment	Drs	P			
3. Science	Ing*/Ir				Dr
4. Technology, engineering	Ing*/Ir				Dr
5. Medical sciences medicine, pharmacy, and veterinary medicine dentistry	Bc*/Drs		P		Dr
6. Economics	Bc*/Drs	P			Dr
Accounting	Drs			P	
7. Law	Mr				Dr
8. Behaviour and society	Bc*/Drs				Dr
9. Language and culture	Bc*/Drs				Dr

Bc- baccalaureus;

Ir- ingenieur(universiteit);

P- professional qualification;

Dr- doctor.

Ing- ingenieur (HBO);

Drs- doctorandus;

Mr- meester in de rechten;

**Note:** Diplomas of higher professional education (HBO) are marked with an asterisk (\*); the other diplomas belong to university education.

## 2. INSTITUTIONAL FRAMEWORK

In the Netherlands, the system of higher education, including doctoral studies, has been regulated by the University Education Act ( *WVO*) and the Higher Professional Education Act ( *WHBO*), both dating back to 1986. In September 1993 a new act came into effect that replaced both: the Higher Education and Research Act ( *WHW*). The legal status of trainee research assistants ( *ALO's*) at state-supported universities and research institutes is defined in these acts.

## THE DOCTORATE IN THE EUROPE REGION

There are no national bodies that manage or administer doctoral studies. The Councils of Deans of the universities grant faculties the right to admit doctoral students and to confer doctoral degrees. No restrictions are set on the number of candidates or fields of specialization. Doctoral candidates can be funded indirectly by the state through grants from the Netherlands Organization for Scientific Research (NWO) and the Royal Netherlands Academy of Arts and Sciences (KNAW).

The most common route to the doctor's degree is through a position as a trainee research assistant (AIO). The AIO system was introduced in 1986 to increase the number of doctorates awarded in the Netherlands. AIO positions can be offered at state-supported universities and research institutes and at institutes of the KNAW or NWO.

AIO positions can be held for a maximum of four years, within which time the thesis must be completed. Trainee research assistants are employed by the university or institute and receive a salary the level of which reflects their intermediate position between students and staff. The salaries increase during the course of the four years.

Trainee research assistants conduct academic research and present the results in theses. They must be permitted to spend at least three-quarters of their time on their own work. For the rest of the time, calculated over a year, they can be required to teach or fulfill other duties.

### 3. THE MAIN ROUTE LEADING TO THE DOCTOR'S DEGREE

#### 3.1. Admission

The Dutch word for pursuing a doctorate is *promoveren*; being awarded the degree is called *promotie*. To be eligible to pursue a doctorate, a candidate must have either a university diploma (carrying the title of *doctorandus*, *meester*, or *ingenieur*), or a diploma of higher professional education (*bac - calaureus* or *ingenieur*). There are no further requirements.

Candidates are in fact selected through the AIO system. Only a certain number of AIO positions are available, and these are filled on a competitive basis. Applicants are judged on the basis of the thesis written for their initial degrees, their grades and publications, an interview, and recommendations. Appointments are made by committees.

### 3.2. Organization of Doctoral Studies

Doctoral studies have a nominal duration of four years and can be pursued either full-time or part-time. Most AIO positions are full-time, but part-time appointments are also possible.

Every doctoral student has a specially appointed supervisor, called a promotor. This person's role is to advise and encourage the student and to provide both theoretical education and practical training. Any full professor (hoogleraar) may be a supervisor. Professors may supervise as many doctoral students as they wish. The training and supervision of doctoral students is considered one of their duties.

A doctoral student who is also a trainee research assistant is also assigned a counselor who makes sure that the regulations regarding AIO positions are being observed. The counsellor is generally a member of the personnel department.

The executive board of the university makes sure that the board of the department or research institute has drawn up a plan for the training and the supervision of given trainee research assistants. This plan must be elaborated in consultation with the student and his or her supervisor and must be tailored to the student's needs. The plan must indicate the knowledge and skills to be acquired and the means that will be used to do so. It must also give the name of the supervisor and indicate how many hours of personal supervision he or she must give the student per month. Towards the end of the first year, details concerning the remainder of the appointment are added to the plan which is modified each year as necessary.

After one year, the work of the trainee research assistant is assessed to see if it conforms with the plan and with the appointment's objectives. The procedure and criteria used for this assessment are determined by the university executive board. If the assessment confirms a suspicion that the trainee is not capable of achieving the objectives within the time allowed, he or she may be dismissed.

Trainee research assistants may ask to meet with their supervisors as often as they wish, and they may receive help from other members of the department and even from outside the country. During their doctoral studies, trainee research assistants may go to other universities or research centres to conduct part of their research. They may also attend international meetings and take short courses as part of their training.

In the Netherlands, a doctor's degree does not automatically entitle its bearer to an academic appointment or to a position in industry.

### **3.3. Programme**

Doctoral studies consist mainly of research. Coursework is generally not required; however, the plans for training and supervision do sometimes require a trainee research assistant to attend, for example, special seminars or courses in methodology. Such courses could require a test or an examination. In some fields, an internship or an industrial placement might be part of a doctoral programme.

### **3.4. Dissertation**

The outcome of doctoral studies is a dissertation presented in the form of a monograph or a series of related publications put together in one volume. Generally speaking, the dissertation must be written in Dutch, French, English, or German. Other languages require permission from the Council of Deans.

The dissertation must report on original research and present scientific results. It should make an original contribution to knowledge in the field and testify to the candidate's mastery of research methodology.

The dissertation topic must be approved by the supervisor and by a promotion committee. After the dissertation is written, it must be officially submitted to the supervisor, together with an abstract. The supervisor can approve or reject either or both. In case of rejection, a doctoral student may appeal to the Council of Deans, which is the highest authority on academic matters within the university. A dissertation approved by the supervisor is then submitted to the promotion committee. Following the committee's approval, the dissertation is printed and sent to the university administration. Most universities require fifty to one-hundred copies.

Doctoral studies culminate in a public defense of the dissertation before the promotion committee. The committee is appointed by the Council of Deans for the dissertation in question. The promotion committee has three members. All hold doctor's degrees themselves and at least one is from outside the university. It is not uncommon for one member to be from another country. The supervisor is always included on the committee.

For one hour the candidate responds to questions and criticisms raised by members of the committee and by other people who have obtained permission to speak from the university rector. The defense is open to anyone who wishes to attend and may be conducted in a language other than Dutch with the permission of the rector. Immediately following the defense, the committee withdraws to deliberate briefly. When the committee returns it will have decided whether or not to award the doctorate with distinction (*cum laude*).

## *THE NETHERLANDS*

A copy of the dissertation must be deposited in the library of the university awarding the degree, and it must be offered for inclusion in the university's data bank. Additional photocopies or copies on microfilm are not required.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

A person can earn a doctor's degree outside the AIO system by writing a dissertation independently. The requirements and procedures are otherwise the same as described above.

### **5. THE SECOND DOCTOR'S DEGREE**

The possibility of earning a second doctor's degree is not available.

### **6. RECOGNITION**

A person who has obtained a title at a higher education institution outside the Netherlands and who is authorized to use that title in the country concerned shall likewise be authorized to use that title in the Netherlands in the same way as in the said country. If approved by ministerial order, he or she shall be authorized to use the Dutch title. These degrees are considered case by case. The ministry issues recommendations regarding criteria for the recognition of foreign doctoral degrees.

Within the framework of the European Union, the Council of Europe, and UNESCO, the Dutch government has supported and signed all major agreements regarding the mutual recognition of academic degrees and periods of study. The Netherlands has also signed detailed bilateral agreements regarding academic equivalence with the Federal Republic of Germany and with Austria.

# NORWAY

## 1. GENERAL INFORMATION

The doctorate in Norway is considered to be the highest stage of postgraduate studies. Two routes lead to it:

- the route leading to the traditional old degree, the doctor philosophiae, (called the alternative route) with no requirements as to formal supervision and course work;
- the route leading to the new degrees (called the major route) which is based upon doctoral degree programmes within the specific fields of faculties.

Both degrees require the same level of scientific and scholarly insight. The specific goal of studies (both routes) is the writing of a thesis of high academic level based on independent research in a particular area of specialization.

The traditional degree, doctor philosophiae - or rather family of degrees - is based upon the submission and successful defense of a thesis. No course work and formal supervision are involved, and there is no time limit. These degrees are therefore often called free degrees. The following degrees fall within this system: the Doctor philosophiae (granted by the universities); the Doctor oeconomiae (granted by the University College of Economics); the Doctor technicae (granted by the University College of Technology which is a part of the University of Trondheim); the Doctor agriculae (granted by the Agricultural University College); and the Doctor medicinae veterinarian (granted by the University College of Veterinary Medicine).

The old *doctor philosophiae* degree is not a second degree, even though it was to some extent patterned upon the German *Dr.habil.*, i.e., the second doctorate. However, one can observe that in many fields the traditional doctorate, under the influence of American science after the Second World War, started to move towards resemblance of the PhD degree. The old degree, with no requirements as to formal supervision and course work, is still an alternative for some candidates.

A new system of degrees is based upon doctoral degree programmes within the fields of particular faculties. The programmes include both formal course work (training component) and work on a doctoral dissertation conducted under individual supervision. Admission to organized doctoral training is formalized in terms of a written agreement. The contract is established between the institution, the doctoral candidate, and the supervisor(s). National regulations for these



## THE DOCTORATE IN THE EUROPE REGION

### 2. INSTITUTIONAL FRAMEWORK

The right to grant doctorates and the formal responsibility for the doctoral degree programmes are given to the four universities and the six university level colleges. The following institutions have the right to grant doctorates:

Institution	New degrees	Old degrees
1.The University of Oslo	dr.scient., dr.polit., dr.art., dr.med, dr. odont., dr.psychol., dr.theol., dr.juris.	dr.philos.
2.The University of Bergen	dr.scient., dr.polit., dr.art., dr.med., dr. odont., dr.psychol.	dr.philos.
3.The University of Trondheim	dr.scient., dr.polit., dr.art., dr.ing., dr.med.	dr.techn.
4.The University of Tromsø	dr.scient., dr.polit., dr.art., dr. med., dr.psychol., dr.juris.	dr.philos.
5.The Oslo School of Architecture	dr.ing.	
6.The Norwegian School of Economics and Business Administration	dr.oecon.	dr.oecon.
7.The Norwegian University of Sport and Physical Education	dr.scient.	
8.The Agricultural University of Norway	dr.scient	dr.agric.
9.The Norwegian College of Veterinary Medecine	dr.scient	dr. philos. dr.med.vet.

In addition, one private faculty of theology has received the right to grant the doctor theologiae degree

At national level, doctoral studies are regulated according to regulations adopted by the Ministry of Research, Education, and Church Affairs. These regulations specify:



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- the institutions which have the right to grant doctoral degrees;
- what degrees can be awarded by each institution;
- the standardized time norm for the degrees with organized research training.

All the other regulations which determine the concrete procedures for doctoral studies are established by the individual institutions. Each institution determines the rules and procedures for the award of its degrees, particularly:

- the basic regulations for the degrees;
- the special supplementary provisions for each degree;
- the standardized contracts between the candidates, the supervisor(s), and the faculty/department to which each candidate is to be affiliated;
- the curricula for the doctoral degree programmes (especially for the course work and other training components);
- the contracts between the degree awarding institution and the external co-operating institution involved (research council, research institute, regional college);
- the statutes for the evaluation procedure.

No special body exist in Norway for carrying out the management or the administration of doctoral studies. Thus full responsibility for the research training and the certification of qualifications rests with each degree awarding institution. The universities are expected to combine scholastic breadth with education at the highest level and link a wide range of disciplines to basic research. The universities therefore have special responsibility for research training. The university colleges are expected to offer education leading to the highest level within their specialities and be responsible for basic research and research training within their fields. Each degree awarding institution has separate appointed committees for doctoral studies at both central and faculty level.

The degree-awarding institutions co-operate, both formally and informally, through the Norwegian Council of Universities. The Council of Universities is a common body for the universities and the university colleges and has a coordinating function regarding doctoral studies. Through extensive co-operation at national level, the institutions harmonize their individual regulations. As a result of this co-operation, the institutions have all developed regulations along similar lines for all the new doctoral degrees and are working out harmonized regulations for the old degree (the doctor philosophiae and similar degrees).

Both research institutes and regional colleges can have doctoral candidates working in their institutions (as scholars and as members of staff). Some of these institutions can offer supervision and courses as a part of the research training (doctoral degree programmes) they offer. The supervisors and the courses must be accepted by the degree awarding institutions. This kind of co-operation is regulated by contract between the degree awarding institution and the external institution involved.

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The Norwegian Research Council is responsible for monitoring the national demand for doctoral candidates. The degree awarding institutions receive resources from the state for research training and have responsibility for planning both with regard to internal and national needs. According to national policy, doctoral studies are normally financed by grants given by the state through universities or university colleges and the Norwegian Research Council. Grants are usually run for a period of four years even though the nominal duration of doctoral programmes is three years. Doctoral candidates are required to spend about twenty-five percent of their time teaching and doing some administrative work. Consequently, the qualifying period is extended to four years. Currently work is also being carried out to implement this funding model for cases in which doctoral studies are financed from other sources, such as enterprises. If doctoral candidates who are employed in academic positions can only spend forty to fifty percent of their time on doctoral studies, their qualifying periods are extended to five or six years.

### **3. THE MAIN ROUTE LEADING TO THE DOCTOR'S DEGREE**

The description included below in paragraphs 3.1 to 3.3 applies only to those doctoral degrees which are based on admission to organized research training programmes. For the dr.philos. degree, see Section 4. Paragraphs 3.4 and 3.5 cover both the new and the old degrees.

#### **3.1. Admission**

In order to be admitted to a doctoral degree programme, applicants must have passed the examination for a higher degree in the subject for which they are seeking admission or they must have earned other qualifications which must be approved (by the faculty) as a basis for admission.

Entrance examinations are not regularly required. For applicants who do not have the proper formal qualifications for admission (length, level, and content of previous degrees), supplementary examinations will be required, but they are not regarded as entrance examinations. Master's degrees (especially those not requiring a thesis) are generally not considered equivalent to a higher degree.

Applications for admission must include a plan for the programme of studies proposed. Each plan should include a description of the project (specifying the subject, the research problems, and the methods to be used, and indicating a progress plan for the work to be accomplished), a plan for the training component, a time schedule, a funding plan, and a request for one or more supervisors.

Decisions regarding admission are based upon an overall assessment of the project description, the formal qualifications of the applicants, and the plan for the doctoral degree programme. Approval of the training component is conducted in

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accordance with the requirements pertaining to the various components of this part of the programme. Each application for admission is sent to the faculty which determines whether or not admission is granted, approves the applicant's plan for the training component, and appoints one or more supervisors. The decision is reached after a recommendation has been submitted by the academic community in the subject concerned. The same body also decides on the criteria for ranking qualified applicants in cases in which the number of applicants exceeds the set enrollment intake.

Admission to organized training programmes for a doctoral degree is formalized in terms of a written agreement. The contract is established between the candidate, the supervisor(s), and the faculty/department to which the candidate is to be affiliated. It states the mutual rights and duties of the contracting parties. The contract indicates the subject of the dissertation, the duration of the contract, the funding plan, matters relating to supervision, the work place, and the training component.

### **3.2. Organization of Doctoral Studies**

Training for a doctoral degree is arranged in such a manner that it is normally possible to complete it within the nominal period of three years. At least one semester in this period is to be allocated to organized training (courses, etc). The training component must be completed by the time the dissertation is submitted.

The faculty is responsible for providing all doctoral degree candidates with training at a high academic level. If the unit that is responsible for the doctoral degree programme does not itself arrange the whole training component, the faculty will make arrangements for the candidate to receive corresponding training in another unit or in another institution providing approved doctoral degree training. Very often (especially in some fields) the candidate can be a member of a research group.

An individual planning of studies is required. According to the contract, the candidate will submit a yearly report of his or her progress as compared to the plan of study. The report has to be approved both by the supervisor(s) and the faculty board. Normally candidates should be given the opportunity to discuss their dissertation work at departmental seminars.

The work on the doctoral dissertation is conducted under individual supervision. Generally, each candidate has a supervisor appointed from the faculty to which he or she has been admitted. If an external supervisor is appointed, an internal supervisor will also be appointed. In the cases of two or more supervisors, one of them shall be appointed as the principal supervisor. A supervisor must hold a doctoral degree or have equivalent academic qualifications .

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Normally supervisors appointed from within a given institution are not paid extra for their services. Supervision is a part of the normal teaching and research assignments. The supervisor is given a monetary bonus, not a salary, for each doctoral degree awarded. This bonus is given by the ministry as an incentive to stimulate supervisors to induce candidates to fulfill their degree programmes. In cases of two or more supervisors, the bonus is shared between them. The participation of academics from other countries in supervision is fairly common.

Admission to organized training for a doctoral degree is formalized in terms of a written agreement. The agreement states matters relating to supervision, including regular contacts between the candidate and the supervisor(s). The periodicity of the meetings varies and depends on the traditions of the given field, the project, etc., but will always be stated in the contract.

Candidates may do their research outside the degree awarding institution - in Norway or in a foreign country. It is possible for candidates to attend international workshops or courses as part of their training. Residency on campus is required in the sense that the candidate must have the possibility to fulfill the training component of the degree programme as planned and remain in contact with his or her supervisor(s). This requirement is evaluated individually as part of the admission procedure. Residency is not normally required for a defined period of time.

As grant holders, candidates have the normal rights to sick leave, maternity leave, etc. The possibility to be allowed to take on paid work beyond the regular twenty-five percent or to leave temporarily for other employment is very restricted.

There is no intermediate degree or qualification. The licentiate degree exists as a postgraduate degree which is not commonly earned or awarded and which is on a level slightly below the doctoral degrees. It is not considered to be an intermediate degree, but a degree with an independent status. Its future existence and function alongside the new degrees are uncertain.

There is no guaranteed employment for new doctorate holders. There are a few postdoctoral grants for a limited number of new doctorate holders for further qualification. The award of a doctorate to a person already in employment can lead to a salary increase.

### **3.3. Programme**

Doctoral degree programmes consist of research (dissertation), individual supervision, and course work (the training component).

The training component for doctoral degree programmes should provide the academic and methodological schooling that is desirable with respect to the work to be accomplished for the writing of a doctoral dissertation and to qualify

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candidates for professions in which a high level of scientific insight is required. The training component includes courses in the theory of science, research methodology, and advanced courses in the field. The importance and weight of the various parts of the training component are stipulated individually for each degree .

The training component varies from one to two semesters of full-time study. The total amount of time devoted to courses, seminars, etc., is defined for each individual degree by the institution. The training may be offered partly as regular lectures and seminars, partly as shorter, intensive courses, or in any other form approved by the faculty. In those subjects in which no suitable course is provided, an individual reading syllabus may be approved as part of the course programme.

All persons admitted to a doctoral degree programme must attend the training courses required. Documentary evidence is required that the candidate has acquired the necessary academic knowledge. Such documentary evidence may be provided through obligatory. practical exercises, written or oral tests, lectures, seminars, teaching, or in the form of academic and/or popular scientific articles or in any other form approved by the faculty. The training component may also include participation at conferences at which papers are delivered. Foreign language training cannot be part of the training programme. As part of the training component, a doctoral degree candidate may organize a seminar or give a series of lectures and in this way be given help and practice in the dissemination of scientific knowledge. Some popular scientific work demanding approximately the same degree of effort may be approved as equivalent to a part of the training component.

The faculty board is responsible for approving each candidate's training components. The faculty may grant exemptions from participation in parts of the training programme if corresponding requirements have been satisfied at other institutions which provide approved training. Furthermore, in special cases full or partial exemption from such participation may also be granted if documentary evidence can be provided of other training or research experience which constitutes an equivalent qualification.

### **3.4. Dissertation**

The dissertation must be an independent piece of scientific work of high academic level with respect to the formulation of problems, the precision of concepts, the methodological and theoretical foundations, the documentation, and the form of presentation. In short, the dissertation must contribute to the development of new knowledge and achieve academic standards appropriate for publication as part of the academic literature in the field.

The subject and the plan for the research project are first approved by the faculty board as part of the admission procedure. For the dr.philos. degree, the

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subject of the dissertation is not approved in advance but as a part of the final evaluation .

The dissertation may be a self-contained piece of work or the continuation of a thesis previously submitted for a higher degree. The dissertation may also be a continuation of academic work that was carried out earlier in connection with other examinations in the course of study for a higher degree. Normally only work that has been published in the last six years prior to submission of the dissertation may be included. For evaluation as an individual piece of research, no work may be accepted that has been approved as a thesis for a higher degree or as a thesis for a magister or licentiate degree unless the work is included as a minor part of a dissertation consisting of several connected works. Several minor works may be approved as parts of a doctoral dissertation when they form a whole in terms of their content. In such cases, in addition to the individual parts, a summary will be made giving a more detailed account of how the minor work adds up to an integrated dissertation.

Part of a piece of joint work may be approved for evaluation provided that it represents an independent contribution that may be identified to the extent that this is necessary for the evaluation. In such cases, declarations will be obtained from the remaining authors and others who have followed the work so as to identify the candidate's own contribution.

A piece of work that has previously been recognized as satisfying the requirements for the doctoral degree of a foreign university or college may not be accepted for evaluation even if the work is submitted in a revised form.

Dissertations may be written in Norwegian, Swedish, Danish, English, German, or French. If the candidate wishes to use another language, application for special permission is made at the time of admission.

The dissertation must be made available to the public. No restrictions may be placed upon the right to publish the results of a dissertation.

If a doctoral dissertation is rejected, a new piece of work, or the original work in a revised form, may not be submitted for a new evaluation until at least six months from the date of the first rejection.

The doctoral degree is awarded on the basis of: a) a satisfactory scholarly/scientific dissertation and a satisfactory defense in a public disputation; b) satisfactory completion of the training programme, or possibly any other approved academic training or qualification; c) at least one satisfactory trial lecture.

Along with the application to have a dissertation evaluated, documentary evidence should be attached to the effect that the training programme has been completed. If the dissertation is approved for disputation, a fixed number of copies

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of the dissertation should be available to the public no later than one month before the disputation is to be held. A brief summary, which may serve as a press announcement, should be submitted together with the dissertation.

A piece of work that has been submitted may not be withdrawn until final decision has been reached as to whether or not it is worthy of being defended for the doctoral degree.

To evaluate the trial lecture(s), the dissertation, and the defense thereof, the faculty appoints, on the basis of a proposal from the relevant community in the subject, an expert adjudication committee consisting of no fewer than three members. The members must hold doctoral degrees or possess equivalent academic qualifications. A supervisor may not normally be a member of the adjudication committee. At least one of the members of the committee should be a person who has no connection with the institution. To the extent that it is possible, one of the members should be from a foreign institution.

The committee submits a reasoned report on the acceptability of the thesis, accompanied by individual statements, if any. Grounds for any dissent must be given. The report of the adjudication committee with any comments must be dealt with by the body to which the institution has delegated such authority.

The doctoral degree programme is concluded with: a) at least one trial lecture on a prescribed topic; b) a disputation.

The disputation should normally be held within six months after the dissertation has been submitted. The trial lecture(s) must be delivered before the disputation is held. When only one trial lecture is given, it must always be on a prescribed topic. The topic of this trial lecture is determined by the adjudication committee and announced to the doctoral candidate two weeks before the lecture. In the case of two lectures, the candidate is free to choose the topic for the other lecture which must not be identical with the subject of the dissertation. The lecture(s) and the disputation take place in the language in which the dissertation is written, or in another language that has been authorized in pursuance of the regulations for the degree.

The adjudication committee evaluates the trial lecture(s) for which a satisfactory performance is required. The disputation is open to the public and is held only if the dissertation has been judged worthy of defense. There should normally be two opponents unless otherwise laid down in supplementary provisions. The opponents must be members of the adjudication committee. The committee itself appoints the opponents.

The disputation takes place as a discussion between the opponents and the doctoral candidate. The first opponent opens the discussion and the second opponent concludes the disputation. After the disputation, the adjudication committee sends a report stating whether or not the candidate's overall

## *THE DOCTORATE IN THE EUROPE REGION*

performance was satisfactory. If the trial lecture(s) and/or the disputation are not satisfactory, a new test may not be held until six months after the disputation.

On the basis of the report from the adjudication committee that the trial lecture(s) and the disputation were satisfactory, the institution's highest governing body confers on the candidate the doctoral degree. A doctoral degree certificate is issued by the institution. The certificate specifies the title of the dissertation along with information concerning the academic training programme in which the doctoral candidate participated. The diploma has an appendix with further information: academic institution, faculty, the candidate's name and date of birth, the name of the degree, year and semester when the degree was awarded, department, academic field, date of the public defense, title of the thesis, topic(s) of the trial lectures (prescribed topic and the topic chosen by the candidate), information on the training component of the doctoral degree programme (courses, seminars, etc.), date and year of the award, signature, and seal. The appendix is signed by the dean and the administrative director of the faculty.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

Doctoral study leading to the *dr.philosophiae* (and the other similar degrees mentioned above) is based only upon research. No course work and formal supervision are involved, and the study has no time limit.

The following persons may present themselves for examination for the doctorate:

- candidates who have passed the examination for a higher degree (general studies at graduate level, professional degrees) and candidates who have obtained similar qualifications abroad;
- candidates who have passed the examination for an undergraduate level degree (general studies) and candidates who have obtained similar qualifications abroad.

If a candidate does not possess one of these required degrees, he or she may nevertheless be permitted to present himself or herself for examination for the doctorate if the higher governing body of the institution finds that he or she has provided proof, by previous research or by success on special tests held for this purpose, of competence in the subject concerned equivalent to that of the required degree.

The institution's highest governing body confers the doctoral degree on the basis of a satisfactory dissertation and its satisfactory defense in a public disputation and two satisfactory trial lectures. The requirements for the dissertation and the evaluation procedure are the same as for the new degrees. The diplomas for the old and the new degrees are identical.



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### **5. THE SECOND DOCTOR'S DEGREE**

Norway has no second doctor's degree.

### **6. RECOGNITION**

There are no criteria for formal recognition. Doctoral degrees obtained abroad are normally recognized without being compared to the formal requirements for Norwegian degrees. Foreign doctoral degrees are evaluated only when a person has applied for an academic position in higher education. In such cases, evaluation bears only on academic quality and content and on whether or not the person is qualified for the position in question. In other words, there are no set rules or recommendations for the evaluation of foreign degrees.

The universities and the public and private specialized university level institutions themselves make evaluations for appointment to academic positions. Professional recognition, however, is given by the ministries concerned.

# POLAND

## 1. GENERAL INFORMATION

In Poland, doctoral studies are regarded as stages of postgraduate education.

Two advanced degrees of the doctoral type are awarded in the country: the first doctorate (doktor and the second or senior doctorate (doktor habilitowany). The first doctorate requires at least three years of study after graduation from a university or other higher education institution. The second doctorate is the highest-academic degree and is awarded only to the holders of the first doctorate.

The system of academic degrees is portrayed in the Table below.

Field of study	Number of years elapsed since completion of secondary education						
	3	4	5	6	7	8	9 ...
1. Education	LT		ME			D	Dhab
2. Humanities			M			D	Dhab
3. Religion, theology			M			D	Dhab
4. Law			M			D	Dhab
5. Economics	LT	I	M			D	Dhab
6. Administration, business, commerce	LT		M			D	Dhab
7. Exact, natural, and political sciences			M			D	Dhab
8. Engineering, technology, architecture		I	MI			D	Dhab
9. Medical sciences							
medicine				L			D Dhab
dentistry			LS			D	Dhab
pharmacy			M			D	Dhab
veterinary medicine			LW			D	Dhab
10. Agriculture, forestry		I	MI			D	Dhab

LT- licencjat;

I- inżynier,

M- magister,

ME- magister edukacji;

MS- magister sztuki;

MI- magister inżynier,

L - lekarz;

LS - lekarz stomatolog

LW - lekarz weterynarii

D - doktor,

Dhab - doktor habilitowany.

### Note:

1. The Doktor and the Doktorhabilitowany are scientific degrees, the remaining are professional titles.
2. The duration of doctoral studies shown in the Table is minimum. The actual time varies from institution to institution. The table should therefore be considered as a general rather than definitive guide.

## 2. INSTITUTIONAL FRAMEWORK

Doctoral studies and degrees are regulated by the Parliamentary Act on Degrees and Scientific Titles of 12 September 1990 and by the Act of the Ministry of National Education of 10 June 1991. These documents and the subsequent regulations specify:

- the procedure for applying for the right to grant the degrees;
- the list of disciplines and areas in the sciences, the humanities, and the arts in which doctoral studies may be undertaken and academic degrees, granted;
- the procedures for the award of doctorates and habilitations and for promotions to professorships;
- the principles for the organization and the conducting of doctoral studies;
- the principles for the nostrification of foreign degrees and diplomas in higher education.

In addition to the universities, the following institutions are authorized to organize doctoral studies: the Polish Academy of Sciences, Polytechnics, Agricultural and Economics Academies, Engineering Academies, Medical Academies, Educational Academies, and Academies of Physical Education. The right to set up doctoral studies and to confer doctoral degrees is granted by the Central Commission for Scientific Titles and Scientific Degrees (CCSTSD). The CCSTSD is composed of 220 scholars elected from the academies and the higher education institutions by all degree holders in such a way that each discipline or area is represented by at least three professors.

In accordance with the principles laid down in the Act of 12 September 1990, the right to confer doctoral degrees is granted only to those higher education and research institutions which conform to the criteria set by the Central Commission. The criteria applied by the CCSTSD relate to the scholarly level of given institutions, the following factors playing a crucial role:

- the scholarly/scientific achievements of the institution;
- the number of degree holders employed and their scholarly achievements;
- the composition of the body (scientific council) which is to grant the degrees;
- availability of appropriate equipment necessary for carrying out research.

The diploma documents certifying the award of a first or a senior doctorate (doktor and doktor habilitowany), in addition to listing the name of the higher education institution, the faculty, and the scientific institution in which the diploma was earned, also list the title of the doctor's or the senior doctor's thesis, the names of supervisors, and (in the case of a doctor's thesis) the names of the reviewers. The form given to a doctor's or a senior doctor's diploma is specified in regulations laid down by the Ministry of National Education.

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The diploma documents which certify award of the first and senior doctorates are personally given to the candidates during a special ceremony. Diplomas may be awarded with distinction upon the recommendation of the Faculty Council. Both the number of candidates and the specialities are planned in advance by the institutions concerned.

Financial sources for doctoral studies come from the state and from enterprises. Payment by doctoral students themselves and self-support by means of part-time employment in teaching and research are also possible.

The first doctoral degree can be earned in different ways: by enrolling in specially organized doctoral studies in those institutions which have obtained the right to offer them, by carrying out doctoral research while fulfilling one's assignments, or in an individual manner.

Although only approximately twenty to thirty per cent of the awarded doctors' degrees are obtained through specially organized doctoral studies, this route is described in Section 3 as the main route.

### **3. THE MAIN ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission .**

Those persons applying for doctoral studies must be the holders of the first university diploma, i.e., of the professional title of magister (Ms.C./MA) or of any equivalent diploma. No restrictions exist so far as applicants are concerned with regard to age, quotas for foreign students, national minorities, etc.

Along with the completed application form, a candidate for doctoral studies must submit a proposal for the subject of his or her doctoral thesis and a list of publications consisting of no fewer than two items. Applicants do not need to take any entrance examinations.

In the course of the subsequent selection procedure, the following aspects of the applicant's activities are taken into consideration: the quality and relevance of the magister thesis, average grades in previous studies, professional experience, working experience outside the universities, the outcome of personal research, and the entrance interview.

The registration procedure of the candidates enrolled for doctoral studies is carried out by the respective institution.

### 3 2. Organization of Doctoral Studies

The Act of the Ministry of National Education of 10 June 1991 lays down the general principles for the organization and the conduct of doctoral studies. The institutions concerned specify them individually in the process of implementation.

Most institutions offer doctoral programmes for both full-time and part-time studies. A first doctorate course programme requires at least three years of study, but the actual duration of studies is established by the Faculty Council or the equivalent body of the organizing institution.

Doctoral students work under the guidance of their supervisors, approved experts from the relevant disciplines. A supervisor must be the holder of the second doctor's degree or be a professor in the given field of specialization. Supervisory activities are prestigious as they testify to the high professional level of supervisors both as academics and as scientists and teachers. This activity can constitute a part of individual teaching and research assignments and can be remunerated in addition to base salary.

A doctoral student may have as many meetings with his or her supervisor as he or she needs. In addition, he or she may consult with any member of the department/faculty. The faculty members so approached are not paid extra for the advice which they give. Although rarely the case, the participation of academics from other countries in the supervision of a candidate's programme is also permitted. The national regulations concerning doctoral studies permit joint supervision and single award as the only form of inter-university co-operation for this type of activity.

An individual plan of studies is drawn up for each doctoral student. The progress made is monitored by the supervisor and discussed in seminars and in the Faculty Council.

During the course of doctoral studies, students may interrupt and resume studies, do part of their required research in other universities or research centres, and attend international workshops and short-term courses on relevant problems. They are also allowed to do part-time paid teaching or research.

The award of the doctor's degree entitles one to further employment in higher education or research institutions, industry, and in other types of organizations. The award of the degree to a candidate already in employment automatically leads to a salary increase, but it does not involve immediate job promotion. The award of a first doctorate is the basic requirement for appointment to a lecturer's post in higher education institutions and staff posts in scientific and research institutes.

### **3.3. Programme**

The programmes of doctoral studies consist of postgraduate courses and research. Students must attend prescribed lectures and take part in seminars as well as undertake certain research projects. The proportions given to the components of the programme are not rigidly fixed. They are determined for each student by the latter's supervisor and the Faculty Council.

In addition and prior to the defense of the dissertation, each student must pass three doctoral examinations: one in the field of specialization relevant to the subject of the thesis, a second one in an additional discipline, and a third one in a modern language.

### **3.4. Dissertation**

The requirements regarding the quality of the doctoral thesis are specified in the Act on Degrees and Scientific Titles. The dissertation should constitute a significant contribution to knowledge in the relevant field and is expected to be an original solution to a scholarly problem and to prove general theoretical knowledge of a given field as well as the candidate's ability to carry out individual research. The topic of the dissertation must be approved at the start of doctoral studies by the supervisor and the Faculty Council.

The dissertation is presented in the national or a foreign language in the form of a monograph, a research and development project, a construction project, or a technology development project in the field of specialization.

A public defense of the dissertation is compulsory. The defense is open to anybody who wishes to attend it. Prior to the defense, the candidate must present to the Faculty Council an abstract of the dissertation and advertise the defense in the local press.

Two official opponents, holders of the second doctor's degree or of the title of professor, are appointed to review and assess the dissertation. At least one of these should be from outside the unit sponsoring the defense of the dissertation. They express their opinions during the defense of the dissertation.

The Faculty Council of the higher education institution or the Scientific Board of the research institute accepts (or rejects) the defense of the dissertation. They are authorized by the Central Commission for Scientific Titles and Scientific Degrees, the latter functioning as a permanent body, to award the degree. The Council (Board) is normally composed of eight to twelve members with the required qualifications of professor or senior doctor.

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A copy of the dissertation must be deposited in the library of the awarding institution and in the national data bank. Further copies of the dissertations are available in Xerox and microfilm forms.

There is no intermediate degree or qualification; therefore, in the case of failure on the final defense, that is, if the dissertation is not considered to merit the award of a doctorate, no lower diploma can be awarded. Former doctoral students simply continue their professional work.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

Being an assistant at a university or other higher education institution is the most common path leading to the doctor's degree. The accepted rule is that a person may occupy the position of assistant up to eight years. During this period, he or she teaches classes, takes part in the research conducted by a supervising professor, and prepares his or her doctoral thesis under the supervision of this professor.

One may also carry out doctoral research and prepare the doctoral dissertation independently.

In both cases, the basic requirements concerning the doctoral examinations, dissertation, defense, and award are the same as for students attending specially organized doctoral studies.

### **5. THE SECOND DOCTOR'S DEGREE**

The second or senior doctorate (doctor habilitowany) is the highest degree awarded in Poland. It is granted by the Faculty Councils of higher education institutions, by institutes of the Polish Academy of Sciences, and by the Scientific Boards of institutions authorized to do so.

The basic prerequisite for earning a senior doctorate is an earned first doctorate. The candidate must then give proof of considerable scientific achievement and present a habilitation thesis, the requirements for which, as in the case of the first doctor's thesis, are specified in the Act on Degrees and Scientific Titles. This thesis must constitute a major contribution to the advancement of knowledge in the given discipline.

The thesis in question must be defended successfully in a special oral habilitation examination. This examination, which is conducted by an authorized Faculty Council or Scientific Board, takes place after three opponents, holders of the second doctor's degree or of the title of professor, who are recognized experts in the relevant discipline, have read and approved the habilitation thesis submitted.

## *THE DOCTORATE IN THE EUROPE REGION*

The senior doctorate is awarded as a result of a secret vote by the Faculty Council or by the Scientific Board before which the habilitation examination took place. The degree awarded in this way must then be submitted for validation to the relevant section of the Central Qualifying Commission for Scientific Staff. Indeed, full documentation on the given candidate: the thesis, the opinions of the opponents, and the examination reports is forwarded to the Committee.

### **6. RECOGNITION**

Academic degrees awarded abroad are nostrified by those faculties of higher education institutions which are entitled to grant the degree of doktor habilitowany.

If there is no equivalent in Poland of an advanced degree earned abroad or if no responsible body or relevant institution for nostrification can be found, this nostrification procedure is carried out by the Board of Experts designated by the Central Commission for Scientific Titles and Scientific Degrees.

The Board of Experts is entitled to exempt a foreign degree holder from some or all of the nostrification procedure.

These procedures include the following:

- the appointment by the scientific council of the reviewers of the given thesis and the establishment of the manner in which the dissertation is to be assessed;
- holding of doctoral examinations;
- in the case of the habilitation, apart from due examination and presentation of an original habilitation dissertation in monograph form, candidates must deliver a habilitation lecture.

The nostrification of scientific degrees takes place only if there are no bilateral agreements stipulating the equivalence of recognized degrees.



# PORTUGAL

## 1. GENERAL INFORMATION

In Portugal, the doctorate is regarded as a stage of postgraduate studies. There are two levels of doctoral degrees: the doutoramento and the agregação.

The first doctor's degree (doutoramento) is awarded upon completion of an academic programme following a graduate degree in the given field. The time required to earn the degree is in no case shorter than three years after the initial enrollment for doctoral studies, and it may vary a great deal according to the requirements for the specific areas of study and/or institutions.

The second doctor's degree (agregação) is the highest level of qualification. It is awarded only to the holders of the first doctorate.

The system of academic degrees in Portugal is presented in the Table below.

Field of study	Number of years elapsed since completion of secondary education							
	3	4	5	6	7	8	9	...
1. Education	B	DESE/L	L	L	M	M	D	Ag
2. Literature and languages		DESE/L	L	L	M	M	D	Ag
3. Architecture			L		M		D	Ag
4. Law			L		M		D	Ag
5. Social sciences		L		M			D	Ag
6. Medical sciences								
medicine				L		M	D	Ag
dentistry				L		M	D	Ag
veterinary medicine			L		M		D	Ag
pharmacy			L		M		D	Ag
7. Exact sciences		L	L		M		D	Ag
8. Economics			L		M		D	Ag
9. Technology	B	DESE/L	L		M		D	Ag
10. Engineering sciences	B			DESE/L		M	D	Ag

Ag - agregação;

B - bacharelato;

L - licenciatura;

## 2. INSTITUTIONAL FRAMEWORK

Doctoral studies are regulated by a law passed in 1992 (Decreto-Lei No. 216/92) which determines a set of criteria to be followed as general regulations.

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Universities have the right to establish their own concrete regulations concerning admission requirements, duration, content, and procedures for studies, etc.

No national body is responsible for the management or the administrative functions of doctoral studies. The universities themselves are authorized to set up doctoral studies and to confer doctoral degrees. Doctoral studies are organized both by state universities and by state recognized private universities under the same conditions in both cases. At university level, the management and the administration of doctoral studies are the responsibility of the faculty (department) covering the field of study concerned. Proceeding from their particular possibilities and resources, universities make their plans regarding specialities and numbers of candidates that can be enrolled in the respective year.

A common way of supporting oneself financially while studying for a doctorate is by working as a teaching or a research assistant. Various systems of scholarships and fellowships are also available. Thus there are many types of funding arrangements. Their availability depends upon the various programmes and/or institutions concerned. Tuition fees are generally charged, particularly to doctoral students who apply for admission to universities other than those in which they earned their previous degrees.

### **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

According to Decreto-Lei No. 216/92, persons having passed a course leading to the mestre degree or, less commonly, to the licenciado degree with good grades may be eligible to apply for admission to a doctoral programme. Their actual admission is determined by the specific universities to which application is made, the latter basing their decisions on the extent to which the applicants meet their requirements.

Universities reserve the right to grant admission to their doctoral programmes after they have properly considered the societal needs for graduates and their own abilities to offer the programmes in question. In many fields of study, admission is competitive. In the course of the selection procedure, the mestre thesis, average grades in previous studies, professional experience, and personal research can be taken into consideration. Letters of recommendation from previous instructors or supervisors can also be required. No entrance examinations are required.

### **3.2. Organization of Doctoral Studies**

Doctoral studies can be both full- and part-time.

Although students are assumed to have acquired the required knowledge of scientific methodology and of the field in which they wish to pursue studies to the highest level, they need senior staff members to supervise them. Supervisors, in principle, must be holders of the degree of doutor or of *agregação* and have relevant research experience. The number of students they can have at a time is not subject to formal limitations. But supervisors in Portugal rarely have more than one student at a time.

The frequency of meetings between a supervisor and his or her student(s) is not fixed; rather, it is ruled by mutual agreement. In addition to gaining prestige among colleagues and academics in general, supervisors may be paid an additional fee for the guidance they provide to doctoral students. But supervisory work can also be considered as part of the teaching and research load of the supervisor.

Students may request the support and guidance of scholars from other faculties of the home or of other universities. Academics from other countries fairly commonly take part in the supervision of candidates. Joint supervision and single award as well as joint supervision and single award with mention of co-operation on the certificate are permitted as modes of inter-university co-operation in the preparation and award of doctorates.

Doctoral students work according to their individual plans. The progress made is discussed with their supervisors and in the faculty. Students may interrupt and resume their doctoral studies, carry out part or all required research in any university or research centre in the country or abroad, do part-time teaching and research, and attend international workshops and courses as part of their training.

The award of the doctor's degree entitles its holder to future employment in higher education and in research. If the person in question is already in employment, the award of the doctorate leads to promotion and to a salary increase.

### **3.3. Programme**

Doctoral programmes comprise coursework and independent research which should result in a thesis or dissertation. Holders of the degree of *mestre* may be exempted from coursework. The overall trend, however, is to reduce coursework. Also, changes are expected with regard to the required thesis format.

## *THE DOCTORATE IN THE EUROPE REGION*

When offered, doctoral level courses consist of lectures and seminars, the programmes of which are mainly devoted to advanced studies in the cognate fields and to research methodology. Students must take course examinations which can be written or oral or sometimes a combination of both.

### **3.4. Thesis**

The submission and defense of a thesis (dissertation) are the major requirements for the award of the doctor's degree.

A thesis proposal must be submitted for approval by the university before any further work on the dissertation can take place.

The thesis is expected to be a scholarly work which contributes to the relevant field of knowledge. It must be a piece of original research which indicates the author's knowledge of research methodology.

The thesis is presented in the form of a monograph in the national or in a foreign language. Along with the thesis, additional publications on the subject should be submitted. No system of external evaluation of the dissertation before the defense has been established.

The defense of the thesis is public and open to anyone who wishes to attend it. It is advertised in the department and in the university. It takes place before a university committee which is appointed by the university for each dissertation. The committee consists of no less than five members, holders of doctor or of *agregação* degree, and includes representatives of other higher education institutions and/or research centres. Academics from other countries may also sit on such committees, a practice which is fairly common.

Following the defense, some copies of the thesis are placed in the faculty or university library and in the national library. The thesis may be published outside the awarding university.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

Holders of a DESE (Diploma de Estudos Superiores Especializados), a qualification awarded by polytechnic higher education institutions to individuals having a bacharel degree (awarded at the end of a three-year course following secondary school graduation for teachers of basic education) may, under special circumstances, apply for doctoral studies.

The same applies to individuals with a «scientific, pedagogical, and professional curriculum» assessed by a university committee as particularly relevant.

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### 5. THE SECOND DOCTOR'S DEGREE

The *agregação* may be regarded as a second doctoral degree awarded to holders of the first doctor's degree (doutoramento) pursuing an academic career at universities, following success on examinations in a specific field of knowledge.

The ability to undertake high-level research and relevant pedagogical competences are implied in the award of this degree which entitles its holder to a job promotion and a salary increase.

### 6. RECOGNITION

The evaluation and recognition of qualifications earned abroad, including doctoral degrees, are carried out by universities as autonomous entities. Holders of doctoral degrees awarded abroad wishing to practice a profession or a trade in Portugal will normally have to submit their credentials to a professional body for

A national policy regarding equivalences, however, results from the international agreements which Portugal has signed in a European Union context and from the UNESCO Convention on the Recognition of Studies, Diplomas, and Degrees Concerning Higher Education in the States Belonging to the Europe Region .

The CRUP (Conselho de Reitores das Universidades Portuguesas), a Rectors' Council of the Portuguese Universities, and the CCISP (Conselho Coordenador dos institutos Superiores Politecnicos), a Coordinating Council of the Polytechnic Higher Institutes, are associations representing higher education institutions at national and international level. They undertake studies and make recommendations regarding the recognition of studies and qualifications.

# ROMANIA

## 1. GENERAL INFORMATION

The doctorate in Romania is the highest postgraduate stage of professional scientific specialization. According to the new Law on Education (1994), it is defined «as a type of study and research which is carried out through specialization course programmes and research activities resulting in the elaboration of a thesis, both corresponding to national and international standards».

There is only one type of doctorate, and it is equivalent to the PhD.

At present, two paths lead to the doctorate:

- i. the traditional old model, based on regulations elaborated before 1989 and amendments introduced in the 1990-1993 period.
- ii. the new model, created by laws and provisions concerning higher education exclusively or inclusively, adopted recently, at the end of 1993 and in 1994.

The two models have many elements in common but also important differences, especially concerning the main route leading to the doctorate, the types of specialization course programmes, and the funding sources used. The new doctoral system will gradually replace the old type. However, the two routes will still coexist for five to eight years as 12,000 students are currently being enrolled and trained in the traditional system.

The system of academic degrees of the Romanian higher education system and the conventional duration of studies are presented in the Table below.

Field of study	Number of years elapsed since completion of secondary education						
	4	5	6	7	8	9	10
1. Education	B	M			D		
2. Humanities	B	M			D		
3. Religion, theology	B	M			D		
4. Fine arts, applied arts	B	M			D		
5. Architecture			B	M			D
6. Economics and social sciences	B	M			D		
7. Administration, business, commerce	B	M			D		
8. Exact and natural sciences	B	M			D		
9. Engineering, technology		B	M			D	
10. Medical sciences			B	M			D
11. Agriculture, forestry, fisheries	B	M			D		

## ROMANIA

- B - Bachelor's Degree;
- M - Master's Degree;
- D - Doctor's Degree.

### 2. INSTITUTIONAL FRAMEWORK

As of 1995, doctoral studies will be organized and expanded on a new legal basis: the Law on Academic Evaluation and Accreditation of Higher Education Institutions (Law 88/1993), and especially, the Law on Education (1994) .

The new legislation stipulates that the doctorate can be organized only in accredited higher education institutions and in research institutes. Universities constitute the highest percentage among institutions authorized to organize doctoral programmes.

Two national bodies which play a major role in determining policy with regard to doctoral programmes (evaluation, approval, or suspension of doctoral programmes, certification or recognition of the doctorate, granting of the right to supervise doctoral students, etc.), are the following: the National Council for the Recognition of University Degrees, Diplomas, and Certificates and the National Council for Academic Evaluation and Accreditation. The Ministry of Education also has a specialized department responsible for the general management of the doctorate.

Certain concerns influence the planning of the doctorate (fields of specialization and numbers of available places). These include social and individual demand, financial resources, available supervisors, available infrastructure, and the research facilities offered by individual higher education institutions and research institutes.

The number of places for doctoral studies subsidized from the state budget is set by the Ministry of Education, while the number of places for doctoral studies covered from fees or other resources is fixed by the senates of the respective higher education institutions. The main financing source is the state budget; however, a diversity of financing sources is envisaged in the near future: grants awarded by companies, foundations, part-time teaching or research assignments, etc.

The doctoral degree is awarded by the institutions which organize doctoral studies. Each award is then approved by the National Council for the Recognition of University Degrees, Diplomas, and Certificates. Each doctor's diploma is issued by the awarding institution, based on an order of the Minister of Education.

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The procedures for the organization and the operation of doctoral programmes, laid down in the form of regulations, are still in a draft stage and will be approved by governmental decision. For this reason, the description in the present text of the new doctoral system is inevitably incomplete. The references made take into consideration only the established legal norms and documents.

### **3. THE MAJOR ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

Admission to the doctorate is competitive. An examination is organized every year for a limited number of places. Only graduates of long-cycle higher education, holding a graduation diploma, can enroll for the competitive examination.

As the master's degree is being launched only as of the 1994-1995 academic year, the draft regulations for the doctorate stipulate that the master's degree will only become a precondition for access to the doctorate in 1995.

Admission examinations have two stages: a) a foreign language examination, evaluated pass or fail, and b) an examination based on the candidate's background and professional-scientific achievements, especially his or her ability to conduct scientific research in the field. The minimum admission grade is 8.5 on a ten-point grading system. If the number of candidates is higher than the number of available places, selection will be made through a ranking of the grades earned.

#### **3.2. Organization of Doctoral Studies**

Doctoral studies can be organized in two ways: full-time (three to four years) and extra-mural (four to five years).

Each student has a supervisor. The latter must be a full professor or a senior researcher of the highest level of qualification and must be accepted and nominated by the National Council for the Recognition of University Degrees, Diplomas, and Certificates.

A supervisor has the right to supervise ten doctoral students at the most. He or she gains no financial or material advantages resulting from this activity, scientific supervision of this type being included among the regular teaching and research tasks.

Each student benefits from an individual course programme elaborated in cooperation with his or her supervisor. The programme is approved by the faculty council.

The progress made is assessed through personal discussions between the supervisor and the student, in special seminars, by analysis at departmental level, etc. Also, the results obtained by the student in examinations and his or her achievements in research projects and reports are taken into account.

The award of the doctorate does not automatically entitle the candidate to professional and scientific promotion. The latter can be earned only through competition, especially in higher education and research institutions. For example,



## ROMANIA

no candidate can enroll in a competition for the position of an associate professor or professor without holding a doctorate.

### 3.3. Programme

Doctoral programmes have two distinct components: postgraduate courses and research. A structural change, brought about by the new model doctoral programme, is represented by the introduction of a series of theoretical and methodological training periods for the acquisition of research skills. Although the regulations on the organization and operation of the doctorate are still in draft form, their aim is to lay down a global structure for doctoral curricula valid for several categories of disciplines. The latter will be differentiated according to each specialization but will include advanced specialization courses, survey courses from cognate disciplines and fields, advanced courses in research methodology, and courses in compulsory and optional disciplines. Their number will differ from one specialization to another, but the methodological dimension will be well represented in all fields.

Courses, seminars, and laboratory activities will be followed by oral, written, or practical examinations, all to precede the second stage, that being the undertaking of systematic research and the elaboration of a dissertation.

### 3.4. Dissertation

The topics of dissertations are chosen by doctoral students themselves or in cooperation with their supervisors in cases in which proposed research topics continue previous research. Each project proposal must be approved by the faculty council or by the council of the given research institute. The dissertation must meet certain standards. It must display theoretical and/or applied relevance, soundness of theoretical premises and methodological rigour, independence of research, originality of hypotheses and of approach to the topic, and soundness of conclusions.

The dissertation is usually presented in the form of a monograph. After it has been completed and the supervisor has approved it, the student makes an abstract which summarizes its main ideas and contributions. Copies of the dissertation are sent to outside experts in the field who are asked to write comments about it.

Each doctoral programme culminates in a public defense of the dissertation which is open to anyone who wishes to attend it. As part of the defense procedure, the dissertation is assessed by a commission. This commission is nominated by the leading bodies of the institution which is organizing the final examination and is approved by the National Council for the Recognition of University Degrees, Diplomas, and Certificates.

## THE DOCTORATE IN THE EUROPE REGION

The commission is made up of a president, the student's supervisor, and at least five officially appointed academics who are established authorities in the respective field. Four of the members must not be employed at the same institution organizing the doctoral final examination. A copy of the dissertation will be deposited in the library of the organizing institution.

### 4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE

The *old*, traditional route to the doctorate, which existed for many years without undergoing any important changes, will gradually decrease in importance, having been chosen only by those students who were admitted to a doctoral programme before 31 December 1994. Certain elements distinguish this route to a doctorate from the model of doctoral training that is going to come into effect soon as the result of new legislation.

- i. Although the old regulations regarding the doctorate stipulate two forms of doctoral studies - full-time and extra-mural - there has in fact been only one type of programme for over twenty years, few exceptions included, that is, the extra-mural type.
- ii. The doctorate was organized in those institutions which had academic staff or researchers authorized to supervise doctoral students. This decision was taken by the High Commission for Diplomas of the Ministry of Education without a preliminary assessment of the global capacity academic, scientific, material - of the designated institutions - such as space, facilities, laboratories, and research equipment. The authorization to set up doctoral studies was based on individuals (academics), not on institutions.
- iii. Enrollment in doctoral studies was conditional on a certain number of years of professional experience. The admission examination was primarily directed at the professional and scientific interests and intentions of the individual candidate with respect to his or her doctoral thesis. A foreign language examination only began to be included two years ago.
- iv. Required training activities and the progress made by the candidate through several stages leading to the defense of his or her thesis were the elements of a programme which would be individually elaborated by the supervisor with the help of the student and had to be approved by the council of the faculty or institute in question.

In addition to the topic of the thesis, the individual programme also included three to four examinations which the candidate had to pass and three to four research reports that he or she had to write and defend. The examination disciplines and the report themes were usually linked to the topic of the doctoral thesis.

In a two-year period, the student was obliged to pass his or her examinations before a commission, the composition of which changed according to the examination discipline. The results of each examination were assessed by grades. If the student did not show up

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for examinations or failed to pass them, he or she was excluded from the doctoral programme.

The research reports were presented and discussed in the departments concerned over a period of four years at the most. There were no courses, seminars, or laboratory activities which could assist the student in his or her training. The student carried out independent research and study, and the supervisor provided advice and counselling only at the latter's request.

The quality standards stipulated for the thesis, the assessment, the defense, and the award of the doctorate were very much similar to those stipulated for the new doctoral model.

All the shortcomings in the old system of doctoral study are being or have been corrected by the new legislation. The emphasis will be placed not only on the individual work of the research student but also on the academic research team and facilities provided by the institution.

### **5. THE SECOND DOCTOR'S DEGREE**

There is no second doctor's degree.

### **6. RECOGNITION**

The recognition of a doctoral diploma obtained abroad takes place according to the following procedures:

- i) The applicant submits:
  - a) an application addressed to the Minister of Education for the recognition of his or her doctoral degree;
  - b) the diploma and the documents relating to studies undertaken and examinations passed within a doctoral programme;
  - c) the doctoral thesis.
- ii) The Ministry of Education submits the candidate's thesis and records to a specialized institution authorized to award the doctorate. The academic council of the respective institution decides, on the basis of a report elaborated by specialists, whether or not to recognize the doctorate in question.
- iii) The thesis and the report approving the thesis are submitted to the National Council for the Recognition of University Degrees, Diplomas and Certificates, which takes the final decision.

# RUSSIAN FEDERATION

## 1. GENERAL INFORMATION

The doctorate in Russia, which is regarded as the highest stage in postgraduate studies, comprises the educational and training system for the higher academic qualification of personnel to be employed mainly in higher education establishments and in research institutions.

The hierarchy of advanced degrees includes doctor's degrees of two levels: the Candidate of Sciences and the Doctor of Sciences. The Candidate of Sciences degree normally requires at least three years of study beyond graduation from a university or other higher education institution, and the Doctor of Sciences degree, in theory, a further two years of study after award of the Candidate of Sciences degree. In reality, to earn a Doctor of Sciences degree requires a much longer period.

The degree system in higher education is presented in the Table below.

Field of study	Number of years elapsed since completion of secondary education						
	4	5	6	7	8	9	10 ...
1. Education	B	Di	M		D1		D2
2. Humanities	B	Di	M		D1		D2
3. Religion, theology	B	Di	M		D1		D2
4. Fine arts, applied arts, architecture	B	Di	M		D1		D2
5. Law	B	Di	M		D1		D2
6. Economics and social sciences	B	Di	M		D1		D2
7. Administration, business, commerce	B	Di	M		D1		D2
8. Exact and natural sciences	B	Di	M		D1		D2
9. Engineering, technology	B	Di	M		D1		D2
10. Medical sciences	B		Di(M)			D1	D2
11. Agriculture, forestry, fisheries	B	Di	M		D1		D2

- B - Bachelor's degree;
- Di - Diploma of higher education;
- M - Master's degree;
- D1 - Candidate of Sciences degree;
- D2 - Doctor of Sciences degree.

**Note:** Alongside the traditional system in which graduates are awarded higher education diplomas, a new system of degrees has been introduced into higher education establishments leading to the Bachelor's and the Master's degrees.

## **2. INSTITUTIONAL FRAMEWORK**

Doctoral studies are regulated by the Law of the Russian Federation on Education, by the Standard Statute on Higher Education Institutions of the Russian Federation adopted by decree No. 597 of the Government of 26 June 1993, and by the Regulations on the Training of Academic and Research Staff adopted by Joint Decree No 637/63 of the USSR Ministry for Higher Education and the USSR Higher Attestation Commission of 15 September 1987.

Two national bodies, the State Committee on Higher Education of the Russian Federation and the Russian Academy of Sciences are responsible for the general guidance of doctoral studies in higher education establishments and research institutions, respectively. Upon the decision of these two bodies, doctoral studies programmes (aspirantura - for the Candidate of Sciences degree and doctorantura - for the Doctor of Sciences degree) can be opened in those higher education establishments and research institutions which possess the required personnel as well as scientific and financial resources.

Planning as to the number of candidates and of specialities is both annual and long-term. Each institution having doctoral study programmes prepares plans and presents them to the State Committee on Higher Education or to the Russian Academy of Sciences for their adoption. These two bodies carry out the same planning at national level.

The financing of doctoral studies comes from the state budget as well as from organizations which are interested in the training of highly qualified personnel.

The two doctoral degrees can be earned in two ways: as part of the aspirantura and doctorantura systems or independently.

## **3. THE MAIN ROUTE LEADING TO THE DOCTOR'S DEGREE**

The main route leading to the Candidate of Sciences degree is the aspirantura which is aimed at imparting the profound theoretical, special, and social education and the training of scientific and teaching staff through the mastery of means and methods of scientific study so that they may be able to skillfully carry out independent research and educational work. A postgraduate student is called an aspirant.

### **3.1. Admission**

The general prerequisites for admission to aspirantura are completion of a full course of study at an institution of higher education and award of the diploma of higher education or of the master's degree, creative thinking shown in practical work or study, and an age limit of up to thirty-five years for full-time and up to forty

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five years for part-time aspirants respectively. Employed specialists with no less than a two year work record are given priority for admission to aspirantura; however, full-time graduates recommended by the Academic Councils of institutes for the continuation of their research (mostly in theoretical problems that do not require practical experience) can also apply for aspirantura.

Admission to entrance examinations is determined on the basis of a synopsis of the selected subject as presented by each applicant, research and development outcomes also submitted by the applicant, and the results of preliminary discussions of projected research topics with possible supervisors. Applicants take competitive entrance examinations in the subject of specialization, in one foreign language, and in philosophy. Enrollment is based on success in the entrance examinations and evaluation by the prospective supervisor.

The registration procedure for candidates who have obtained the right to enroll as aspirants is carried out by the respective higher education establishment or research institution.

Institutions set quotas limiting the number of students to be admitted each year. The quotas are based on the available funds and equipment, the staff necessary for supervision, as well as on the needs of the economy for highly qualified personnel in the given field.

### 3.2. Organization of Doctoral Studies

There are both full- and part-time aspirantura studies. The duration of full- and part-time studies must not exceed three and four years respectively.

A Doctor of Sciences or a professor specializing in the subject area is appointed as a supervisor for each *aspirant* as soon as he or she joins *aspirantura*. An aspirant can have two supervisors or a supervisor and a consultant if he or she does *interdisciplinary* research or research in a field of advanced technology of top priority. The supervisor acts as a tutor to an aspirant, supervises the execution of the individual plan of study, and bears responsibility for the adequate scientific level of the thesis. A supervisor can have up to five postgraduate students at a time. As this type of work is considered to be a normal part of a supervisor's teaching and research assignments, it does not entail any extra salary.

The Academic Council of the institution is expected to approve the subject of the thesis within three months following enrollment and then the individual plan for the entire period of study. The Academic Council supervises the work of aspirants by means of the reports which it regularly receives from supervisors, heads of chairs, departments, sectors, and laboratories on the results of their work with *aspirants*. An aspirant gives a regular account of the execution of his or her individual plan during meetings of the chair, department, etc., and is

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recommended annually by his or her supervisor. In case a student fails to fulfill his or her individual plan of study, he or she is expelled.

A doctoral student can have meetings with his or her supervisor as many times as needed. He or she can also receive help from other members of the institution as well as from academics from other countries, but the latter case is rare. Joint supervision and single award are permitted as a mode of interuniversity co-operation in the preparation and award of the Candidate of Sciences degree.

During the period of postgraduate studies, a student can interrupt and resume studies, carry out part of his or her required research in other institutions, attend international workshops or courses as part of his or her training, and do part-time teaching and research. The latter is paid up to half the salary corresponding to a research or a teaching post.

Full-time postgraduate students obtain a grant paid by the state. The period of studies is included in the general record of scientific work and teaching. Part-time postgraduate students are also encouraged in a number of ways (they obtain, among other things, a fully-paid additional annual holiday).

Having completed a postgraduate course, students have an advantage when applying for a teaching position at a higher education institution or for a research position at a research institution. The award of the Candidate of Sciences degree leads to a salary increase or to a better paid position at a higher education or a research institution. Possession of the Candidate of Sciences degree confers preference when appointment to a post of associate professor (dotsent) is sought.

### **3.3. Programme**

The programme of doctoral studies is aimed at advancing the theoretical and specialized knowledge of doctoral students enabling them to master their research and professional skills and to broaden their social and cultural outlook. The programme comprises both postgraduate courses and research. The courses which are to be taken by aspirants consist of lectures and seminars.

During postgraduate studies, students must study pedagogy and teaching methods, psychology, economics, information technology, mathematical simulation, and certain other subjects, and pass profile examinations set by the Academic Council for every speciality. In addition, they must take a training course in instructional methods.

Aspirants must pass qualifying (Candidate) examinations in the given speciality, in philosophy, and in a foreign language.

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Upon the successful completion of full courses of postgraduate studies, aspirants are awarded the qualification of researcher in their profile (engineer-researcher, economist-researcher, etc.) and the corresponding diploma. This diploma gives their holders priority in occupying academic and teaching posts requiring advanced professional qualifications.

### **3.4. Dissertation**

In order to be awarded the Candidate of Sciences degree, a student must complete, present, and defend a dissertation. Dissertation topics should generally correspond to the scientific areas of the basic projects undertaken by the awarding institution and be approved by its Academic Council for each postgraduate student.

Those certified researchers who, in the course of postgraduate study, have written their theses/dissertations are admitted to defend them. A dissertation is expected to be a scholarly work which makes an original and valuable contribution to the discipline or disciplines concerned and reflects the novelty and significance of the research outcomes. Moreover, the content of the dissertation must demonstrate that its author has an excellent knowledge of the field as well as an aptitude for independent research.

A dissertation can be written in the form of a monograph, that is, as a qualifying scholarly work comprising the scientific ideas and research findings set forth by an author for public defense that can testify to his or her personal contribution to knowledge. A dissertation can also be presented in the form of a scientific report which comprises a summary of the results of research undertaken and published by an applicant which has importance both for science and for practice. The presentation of a dissertation in the form of a scientific report is typical of those applicants who are well-known specialists in their respective areas of science and technology.

The general outcome of the research must be published no later than four months before the defense of the dissertation. An applicant can also present certificates of inventions and discoveries, industrial samples, patents, algorithms, new materials, etc.

The dissertation, along with the preliminary evaluation by the institution in which the research was undertaken, are presented by the author to a Specialized Council for its final appraisal.

Upon the approval by the Specialized Council, an abstract of the dissertation (up to twenty-four pages) is published. The latter should present the basic ideas and outcomes of the research, the degree of originality, and the possibility of practical application of the results. No later than one month before the defense, the abstract is distributed among the members of the Specialized Council, well



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known scientists and scholars, and experts in the field in different educational, academic, and research institutes and organizations for their judgments as to the relevance and value of the work.

The defense of the dissertation is carried out before the Specialized Council. Specialized Councils are organized by the Higher Attestation Commission to accept dissertations in given fields of knowledge in those higher education establishments and research institutions which are acknowledged for their achievements in the respective fields of science. They are standing bodies with a term of office of five years. A Specialized Council is composed of holders of the Doctor of Sciences and the Candidate of Sciences degrees. The total number of its members should not be less than nine. A Specialized Council for the defense of the Candidate dissertation should comprise no fewer than three Doctors of Sciences.

The Specialized Council appoints two official opponents from outside the awarding institution, one of whom is a Doctor of Sciences and the other - either a Doctor or a Candidate of Sciences. Each official opponent presents a review of the dissertation to the Specialized Council, stating whether or not it complies with the set requirements. An official opponent is responsible for the objectivity and quality of his or her review. Official opponents must attend the defense of the dissertation.

The public defense of the dissertation is in the form of a scientific discussion. The defense is open to anybody who wishes to attend it.

Proceeding from the cumulative evaluation of the results of the defense and the judgments of independent experts and official opponents, the Council decides by secret ballot whether or not the dissertation meets the requirements for a Candidate dissertation. If the verdict is positive, the applicant can be granted the degree of Candidate of Sciences. The decision is considered to be valid so long as at least two-thirds of the members of the Council participate in the vote. The defense is considered to be a success if no fewer than two-thirds of those present vote for a pass. In case of failure, the defense can be repeated in a year.

Copies of the dissertation must be deposited in the library of the degree-granting institution, the national library, and in the national data bank. Further copies of the dissertation are available in microfilm form.

The titles of dissertations are published in the proceedings of the Russian Scientific and Technical Information Centre and of the Higher Attestation Commission. Synopses of dissertations are disseminated among the major libraries of the country.

#### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

Another route leading to the Candidate of Sciences degree is outside the aspirantura system. In this case, an applicant, a holder of a higher education diploma with no less than two years of work experience, is attached to a higher education establishment or to a research institution for tutoring in specialized subjects, a foreign language, and in philosophy, the latter varying according to given postgraduate programmes, and for taking the qualifying (Candidate) examinations as well as for preparing a dissertation.

A supervisor (as a rule, a Doctor of Sciences or a Professor) for each applicant is appointed by the institution to which he or she is attached, and possibilities for using libraries, laboratories, and other facilities are made available.

Within a month, the applicant must agree on the plan of his or her individual work with his or her supervisor and present it to the department, sector, or other subdivision of the institution to which he or she is attached. The applicant has to pass qualifying (Candidate) examinations like those for aspirants.

Upon the successful completion of theses and individual programmes, applicants may defend their theses. The requirements for the thesis, the procedure for its defense, and the subsequent award of the academic degree are the same as for aspirants.

Doctoral studies, in the case of the non-aspirantura route, are financed either by the employers of applicants (from the budget for personnel training) or by the applicants themselves. Applicants who successfully combine employment and advanced research are awarded paid leaves for a period of up to three months for the completion of their theses.

#### **5. THE SECOND DOCTOR'S DEGREE**

The second and highest academic degree is the degree of Doctor of Sciences. It is awarded in the same broad fields of knowledge as the degree of Candidate of Sciences. In architecture and fine arts, the degrees awarded are the Doctor of Architecture and the Doctor of Fine Arts, respectively.

Doctoral dissertations are prepared either on a full-time basis during doctoral studies in doctorantura or independently, outside doctorantura. In the latter case, the time to be used for preparation is gained through sabbatical leaves (up to 6 months), the appointment of lecturers to research positions (up to 2 years), scientific missions abroad (up to 10 months), etc.

In Russia, the doctorantura system was developed in 1987 in order to train highly qualified scientific and academic staff for the most important fields of knowledge, science, and technology. Doctorantura can be organized in leading

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higher education establishments and research institutions in given fields of science and of knowledge having advanced research facilities and equipment. The organization, administration, and planning with regard to doctorantura are the same as for aspirantura.

Admission to doctorantura is competitive, available to Russian citizens (the age limit is 40 years) who are holders of Candidate of Sciences degrees and are already known for their contributions in their fields. Candidates must hold posts of responsibility in teaching and/or research testifying to the high level of their academic and scientific work and their capacity to substantially contribute to the solution of fundamentally important social, economic, and cultural problems.

The main admission requirements for doctoral programmes are the following: scientific achievement in a chosen speciality; a complete outline for a dissertation; scientific publications; and the recommendation of employers including an assessment of the applicant's research work. Decision-making with regard to the admission of candidates to doctorantura is the responsibility of the Academic Council of the institution and is based on scientific reports by candidates on the subjects of their dissertations as well as on individual programmes of research and on the conclusions of the departments or other scientific subdivisions of the institution. The subjects of dissertations and the individual programmes and time-periods necessary for their completion are approved by the Academic Council. Proposed time-periods may not exceed three years.

The doctoral course programmes consist of research only. A scientific consultant, a holder of the Doctor of Sciences degree, is appointed to advise doctoral students (doctorants) on their dissertation research. If necessary, doctorants can be sent to other leading research centres in the country or abroad to pursue their studies and research.

Doctorants annually present a report on the results of the work accomplished as measured against their individual programmes to the Academic Council which is responsible for monitoring their progress and for deciding about their continuation in doctorantura.

The main goal of a doctoral student is to complete and to defend a dissertation qualifying him or her for award of the academic degree of Doctor of Sciences. The qualifying requirements for a doctoral dissertation are higher than those for a Candidate dissertation. The dissertation for the degree of Doctor of Sciences should be an advanced work in which an important scientific problem, having economic, socio-cultural, or political significance, is solved, or it should present scientifically-based technical, economic, or technological ideas, the implementation of which would make a considerable contribution to scientific and technological progress.

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In the course of study, a doctorant must complete his or her doctoral thesis, receive its preliminary evaluation in the given institution, and submit the thesis to the Specialized Council.

The Specialized Council for the defense of the dissertation for the Doctor of Sciences degree is designated by the Higher Attestation Commission and consists of Doctors of Sciences. Such a council may also hold the defense of dissertations for the Candidate of Sciences degree. The Specialized Council appoints three official opponents, Doctors of Sciences, one of whom should be a member of the Specialized Council.

The dissertation can be presented in the form of a monograph or a scientific report. The principal results of the research must be published no later than six months before the defense of the dissertation. In addition, an abstract of the dissertation must be prepared and distributed among the members of the Specialized Council as well as among institutions concerned one month in advance of the defense.

The defense procedure for the degree of Doctor of Sciences is the same as for the Candidate of Sciences degree. The decision of the Specialized Council is examined and approved by the Higher Attestation Commission, following which the applicant is awarded the Doctor of Sciences diploma.

During the period of studies, doctorants obtain a state grant. Upon completion of his or her studies, a doctorant returns to the same position at the same institution in which he or she had been working.

The degree of Doctor of Sciences is a prerequisite for appointment to the post of professor in a higher education institution.

Another route leading to the Doctor of Sciences degree is the transfer of the holders of Candidate of Sciences degrees employed in higher education establishments from teaching to research posts for a period of up to two years in order for them to prepare their dissertations. The requirements for this procedure are the same as those for joining doctorantura, except for the age limit, which for the former is forty-five years of age.

The rector of the given higher education institution empowers the Academic Council to hear the scientific report of a candidate on the subject of his or her study, to examine and discuss materials for the dissertation and also the programme of further work on it, and to present conclusions concerning the expediency of moving the candidate to a research post. At the end of the first year, an individual researcher gives an account to the Academic Council of the progress which he or she is making in the preparation of the thesis. The Council then decides whether or not to retain the person in his or her research post for the second year or to move him or her back to his or her teaching position. By the end of the second-year period, an individual researcher is expected to have completed

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his or her doctoral thesis, to present it for discussion to the Academic Council, and then, if recommended, to submit it to the Specialized Council for defense as a dissertation leading to the degree of Doctor of Sciences. The defense and award procedures are the same as those for doctorants.

The third route for the earning of the Doctor of Sciences degree is the preparation of a dissertation on one's own combining work and research without any of the advantages or privileges provided by the other routes described above. In this case, there is no age limit for the defense of the dissertation leading to the degree of Doctor of Sciences.

### **6. RECOGNITION**

The recognition (nostrification) of doctoral degrees obtained abroad is carried out by the Higher Attestation Commission of the Russian Federation. The organization-employer of the foreign doctoral degree holder should apply to the Higher Attestation Commission and submit the following documents:

- an application by the head of the organization-employer;
- the personal record of the employment and research activities of the applicant;
- a copy of the higher education diploma;
- a list of publications;
- a copy of the foreign doctoral diploma (translated into Russian) which is to be the object of nostrification.

The final decision as to the equivalence of the foreign doctoral diploma with one of the two Russian doctoral degrees (Candidate of Sciences or Doctor of Sciences) is taken by the collegium of the Higher Attestation Commission.

# SLOVAK REPUBLIC

## 1. GENERAL INFORMATION

In the Slovak Republic, the doctorate is regarded as a stage of postgraduate studies. Up to 1991, there were two levels of doctoral degrees:

- the first doctoral degree of Candidate of Sciences earned through postgraduate studies known as aspirantura;
- the second and highest doctoral degree of Doctor of Sciences earned through research and other scientific activities known as doctorantura.

In 1991, a new degree, the doctorate (Dr) was introduced. Thus there are now three alternative research training routes leading to doctoral degrees: postgraduate doctoral studies leading to the doctor's degree (Dr which is equivalent to the PhD), a new and increasingly popular route, and the two older routes, aspirantura and doctorantura, which are decreasing in importance. These three routes are gradually converging. A new law on higher education, which is expected to be enacted in 1994, will end the current transitional period and implement only one route for postgraduate research training: doctoral studies leading to the doctor's degree.

The system of academic degrees is presented in the Table below.

Field of study	Number of years elapsed since completion of secondary education							
	3	4	5	6	7	8	9	10 ...
1. Education			Mgr.			D1		D2
2. Humanities			Mgr.			D1		D2
3. Religion, theology			Mgr.					
4. Fine arts, applied arts, architecture	Bc		Mgr.			D1		D2
5. Law			Mgr.			D1		D2
6. Economics and social sciences	Bc		Ing.			D1		D2
7. Administration, business, commerce	Bc		Ing.			D1		D2
8. Exact and natural sciences	Bc		Mgr.			D1		D2
9. Engineering, technology	Bc		Ing.			D1		D2
10. Medical sciences				MVDr.MUDr.			D1	D1 D2
11. Agriculture, forestry, fisheries			Ing.			D1		D2

Bc - Bachelor's degree (bakalor);

Mgr - Master's degree (magister);

Ing - Engineer (inžinier);

MUDr - Doctor of medicine (first university-level degree);

MVDr - Doctor of veterinary science (first university-level degree);

D1 - Doctor's degree or Candidate of Sciences degree;

D2 - Doctor of Sciences degree.

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**Note:** This Table illustrates the current situation (early 1994) of the transitional period in academic degrees .

### 2. INSTITUTIONAL FRAMEWORK

In the Slovak Republic, the doctorate is regulated by the following legal acts:

- Act No. 53 of 26 February 1964;
- Decree of the Slovak Commission for Scientific Degrees No. 65 of 8 September 1977;
- Federal Assembly Act No. 172 of 1990;
- Decree of the Ministry of Education, Youth, and Sports, No. 317 of 2 July 1991.

These acts lay down the general principles of doctoral studies. Their concrete implementation is included in the Statute of each university faculty.

The universities themselves are authorized to set up doctoral studies and to confer the degrees, but the right to set them up is granted by the Ministry of Education and Science upon the proposal or statement of the Accreditation Commission of the Government of the Slovak Republic. The Ministry of Education and Science carries out the methodological guidance providing the universities with recommendations for doctoral studies.

Doctoral studies are organized at training centres. The latter are the university faculties which have been authorized by the Ministry of Education and Science to implement doctoral studies in particular fields and to administer doctoral examinations.

At the level of the training centres (faculties), doctoral studies are managed by the Board of Guarantors for Postgraduate Study, the members of which are the chairmen of professional working groups responsible for the quality of studies in particular fields of study. The president and the members of the Board are approved by the Academic Council of the faculty and are appointed by the dean.

Universities plan their enrollments in doctoral studies both as to number of candidates and as to specialities offered according to the availability of resources, staff, equipment, and facilities.

The financing of doctoral studies comes mainly from the state budget. It is also envisaged that the expenses related to research done by doctoral students be reimbursed by the users of the outcomes of this research. Doctoral students can be granted fellowships and sometimes extra grants. Part-time employment as teaching or research assistants is also possible.

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These legal acts are expected to be replaced by a new law on higher education which is to be enacted in 1994.

### **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

Only candidates having a university-level degree (a master's degree, an engineering degree, or a degree of doctor of medicine) may be admitted to doctoral programmes. Admission, moreover, is competitive and based on a selection procedure.

The training centres advertise the start of admission procedures, stating the fields of study and giving other relevant information. Applicants submit application forms which must be accompanied by a university-level diploma, documents on preceding professional experience (if any), a list of publications (if any), and a curriculum vitae. At some faculties, it is also possible to add a letter of recommendation.

Applicants take entrance examinations in their subjects of specialization and in a foreign language before an admission commission of the given training centre. The admission commission proposes those applicants for enrollment who meet the requirements for admission. If the number of applicants with positive results in the entrance examination is more than the centre can accept, the admission commission selects the best ones on the basis of their success in the entrance examinations, their publications, and their previous scientific or student research activities. Applicants are enrolled by decision of the dean upon the proposal of the professional working group.

#### **3.2. Organization of Doctoral Studies**

Doctoral studies can be both full- and part-time. The nominal duration of full-time studies is three years (four years in some fields) and that of part-time studies, five years.

A supervisor, a holder of a doctoral degree or of the academic title of Professor or Associate Professor, is appointed for each doctoral student. The supervision of doctoral studies is considered to be prestigious work. It does not entail extra remuneration because it is considered to be a part of the normal teaching and research load.

Doctoral students work according to individual plans of study, the progress of which is assessed by their supervisors (annually), and discussed in seminars and in the meetings of the Faculty Academic Council. Doctoral students can have meetings with their supervisors as many times as needed. They can also receive advisory help from other members of the given university as well as from academics in other countries.



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During the period of doctoral studies, students may interrupt and resume studies, carry out parts of their required research in other institutions, attend international seminars or courses as part of their training, and undertake part-time teaching and research.

The award of the doctor's degree entitles its holder to further employment both in higher education and research or in industry. Students who have completed a postgraduate course programme have an advantage when applying for teaching positions at higher education institutions or for research positions in research institutions. For someone who is already employed, the award of the doctor's degree leads to a salary increase or to a better paid position in a higher education or a research institution.

### **3.3. Programme**

Doctoral study programmes cover both postgraduate courses and research. Courses are to be taken by doctoral students according to curricula which include both compulsory and optional subjects. Doctoral students attend lectures and seminars and take part in consultations. They must also pass examinations in compulsory and optional subjects which are a part of their curricula. The number of examinations is set by the training centre.

In addition, doctoral students must take a doctoral examination before a commission which is approved by the Academic Council of the faculty. The examination is devoted to the subject of the doctoral thesis. For the doctoral examinations, students must also submit outlines of their doctoral theses.

### **3.4. Dissertation**

In the course of postgraduate studies, a student must complete, present, and defend a dissertation in order to be awarded the doctor's degree. The dissertation topic must be approved by the supervisor and by the professional working group.

A dissertation must be a scholarly work, based on original research, which makes a contribution to some field of knowledge. It should also demonstrate the ability of the student to solve scientific problems.

A dissertation can be presented in the form of a monograph setting forth the ideas and research findings of the author. It can also be in the form of a series of publications. In addition, inventions and discoveries, algorithms, research and development projects, and the like may be presented as a dissertation.

Along with the dissertation, an abstract of it is presented and distributed to the institutions concerned. The abstract should reflect the basic ideas and outcomes of the research, indicate its degree of originality, and assess its possibilities for

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practical application. The abstract should also contain a list of the student's publications. The results of the expertise of the dissertation undertaken by the training centre and by the supervisor are also submitted.

The defense of the dissertation takes place before a commission which is set up ad-hoc to accept each dissertation. The defense takes the form of a scientific discussion. The latter is public and open to anybody who wishes to attend it. It is advertised in the given university and in the journal of the Ministry of Education and Science.

The dissertation is evaluated by three opponents, one of whom must be a Doctor of Sciences or a Professor. The others may be Candidates of Sciences, Doctors, or Associate Professors. At least two of them must be from outside the training centre and from outside the supervisor's work place. The commission and the opponents are proposed by the Board of Guarantors, approved by the Academic Council, and appointed by the dean.

The commission reaches a decision through consensus at the final closing meeting. If the results are positive, the president of the commission forwards a proposal to the Academic Council of the faculty for the award of the doctor's degree. In case of failure, the dissertation must be revised, and the defense may be repeated not earlier than in six months.

Copies of the dissertation must be deposited in the library of the awarding institution and in the national library, respectively. Further copies of the dissertation are available in Xerox form.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

No other route leads to the doctor's degree.

### **5. THE SECOND DOCTOR'S DEGREE**

The second and highest advanced degree is the Doctor of Sciences degree. It is awarded following the successful public defense of a doctoral thesis before a commission set up for the defense of the doctoral thesis. The degree can be granted by the Presidium of the Slovak Academy of Sciences if the doctoral thesis is defended before one of the commissions set up at the Academy of Sciences, or by the Academic Councils of higher education institutions, if the thesis is defended before one of the commissions set up at the higher education institutions.

The Doctor of Sciences degree can be awarded only to the holders of the first doctor's degree (Candidate of Sciences or Doctor). The preparation of the dissertation for the Doctor of Sciences degree is carried out independently.

## *SLOVAK REPUBLIC*

The qualifying requirements for the dissertation for the Doctor of Sciences degree are higher than those for the doctor's degree dissertation. The dissertation is required to be a scholarly work which makes a significant contribution to new knowledge or to the solution of important practical problems.

The dissertation is usually presented in the form of a monograph. A topically coherent set of publications or a university textbook may also be presented as a doctoral dissertation if they meet the prescribed requirements set for the Doctor of Sciences degree. Discoveries or inventions can constitute a part or a core of the doctoral dissertation.

Along with the dissertation, its abstract and a list of publications are also submitted. In addition, a review of publications and a reference to the dissertation of the applicant's employer are also presented. A relevant commission for defense reviews the documents presented and takes a decision regarding permission to proceed to the defense.

The commissions for defense are set up in higher education and research institutions by the Slovak Commission for Scientific Degrees. They are established as the permanent bodies for particular disciplines or for sets of disciplines. They have terms of office of five years.

No less than three opponents are appointed. At least two of them must be holders of the Doctor of Sciences degree or of the title of Professor, and two of them must be from outside the awarding institution.

The defense and the award procedures for the Doctor of Sciences degree are analogous to those of the Doctor's degree. In case of failure, a candidate may review the dissertation and repeat the defense in a year.

### **6. RECOGNITION**

Doctoral degrees obtained abroad are recognized in the Slovak Republic if they were earned in those countries with which the Slovak Republic has concluded agreements on the mutual recognition of academic degrees. In this case, the diploma obtained abroad has to be presented to the Slovak Commission for Scientific Degrees. The Commission determines the equivalence of the degree earned abroad with the corresponding doctoral degree in the Slovak Republic and testifies to the fact of recognition by issuing the clauses of verification.

If no agreements on the recognition of academic degrees exist, the nostrification of the diplomas obtained from these countries is required. The nostrification procedure is carried out by the Slovak Commission for Scientific Degrees. The following documents must be presented:

- an application form;
- a citizenship certificate;

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- a higher education diploma;
- a doctoral diploma obtained abroad and the documents on previous studies and examinations.

If the results are positive, the Slovak Commission for scientific Degrees grants the corresponding Slovak diploma or issues the clause of verification for the original diploma.

# SPAIN

## 1. GENERAL INFORMATION

The doctorate (*doctorado*) is the highest academic degree. It is awarded at the end of the third stage of higher education. In theory, it requires at least two years of study and research beyond the licenciatura, but in practice, it requires a much longer period for completion. Candidates are required to submit and to defend a thesis. If the thesis is accepted, the title of doctorado is conferred. The doctorado can be earned in all fields of study in which the degrees of licenciado, ingeniero, or arquitecto are conferred.

The Spanish system of academic degrees in higher education is shown in the Table below.

Field of study	Number of years elapsed since completion of secondary education					
	3	4	5	6	7	8
1. Education	Di		L		D	
2. Humanities	Di		L		D	
3. Religion, theology			L		D	
4. Fine arts, applied arts, architecture	Di		L		D	
5. Law			L		D	
6. Economics and social sciences	Di		L		D	
7. Administration, business, commerce	Di		L		D	
8. Exact and natural sciences	Di		L		D	
9. Engineering, technology	Di		L		D	
10. Medical sciences	Di			L		D
11. Agriculture, forestry, fisheries	Di		L		D	

D - doctorado;

Di - diplomado, arquitecto tecnico, ingeniero tecnico;

L - /licenciado, arquitecto, ingeniero.

## 2. INSTITUTIONAL FRAMEWORK

Doctoral studies are part of the third cycle of university studies. Article 31 of the Ley de Reforma Universitaria of 23 August 1983 empowers the Government to establish, on the proposal of the Consejo de Universidades, the basic norms and criteria to be observed by universities in awarding doctoral degrees. The result of this legal mandate was the passing of Royal Decree 185/23 of January 1985 which regulates the third cycle of university studies and the requirements for the award of the doctoral degree. This decree was later modified by the decree of 27 May 1988.

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There is no specialized body in the country carrying out management and administrative functions for doctoral studies. The universities and the research institutes are authorized to set up doctoral studies. Each institution has a Doctoral Commission which enjoys some competence in this domain as regulated by the above-mentioned Royal Decree.

A planning procedure, which is carried out by the universities through their Doctoral Commissions, is in effect for enrollment in doctoral studies. It determines both the number of candidates and the number of specialities.

Doctoral studies can be financed in several ways: by the state, by enterprises, by doctoral students themselves, by university grants, as well as by different public and private institutions.

The route leading to the doctor's degree is described below.

### **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

In order to be admitted to doctoral studies, a candidate should hold the title of licenciado, arquitecto, or ingeniero. As for the number of students to be admitted, the universities may establish a numerus clausus in those areas in which the numbers of candidates exceed the numbers of places available. Rejected candidates may then apply for other course programmes. There are no restrictions as to age or national minorities, nor are there quotas for foreign students. Residency on campus during doctoral studies is not a prerequisite.

The selection procedure is based on average grades in previous studies and on personal research. No entrance examinations are required.

The registration procedure for candidates who have earned the right to enroll as doctoral students is carried out by the respective departments.

#### **3.2. Organization of Doctoral Studies**

Doctoral studies can be both full-time and part-time. Their actual duration is two years of course work and four to five years of research and writing.

A supervisor is appointed for each doctoral student. Although the appointment of the supervisor is subject to flexible criteria, in addition to the general assumption that he or she should hold a doctoral degree in the respective field and should be a university teaching staff member, the Decree stipulates that associate and visiting professors, as well as researchers belonging to the Consejo Superior de Investigaciones Científicas, can also be appointed supervisors. Such

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supervisory work is considered to be a part of the teaching and research assignments of the respective supervisor.

There is no individual planning of doctoral studies. A doctoral student can have meetings with his or her supervisor as many times as needed. The student can also receive advisory help from other members of the department or from abroad. Joint supervision and single award are permitted by regulations as a mode of inter-university co-operation in the preparation and award of doctorates.

During the period of doctoral studies, a student can interrupt and resume studies, do part-time teaching and research, carry out part of his or her required research in other universities or research centres, and attend international workshops or short courses as part of his or her training.

The award of the doctoral degree carries no entitlement to future employment in higher education or research. However, it is a prerequisite for teaching in faculties and in higher technical schools, but it is not a sufficient condition in itself because candidates must also pass a competitive examination. For the non-teaching professions, the title does not create any other professional entitlement in addition to the one already acquired by holding a licenciado, arquitecto, or ingeniero diploma, but it is appreciated by enterprises.

### **3.3.Programme**

The programme of doctoral studies covers both postgraduate courses and research. The academic responsibility for doctoral programmes is assumed by the departments. The course programmes to be taken by doctoral students consist of lectures, seminars, and research lasting a minimum of two years. The Decree stipulates the possibility for the departments concerned to carry out their doctoral programmes in other universities or in public or private research institutions, national and foreign.

A special doctoral commission is set up in each university in keeping with their statutes. Upon the proposal of the departments concerned, the doctoral commission must approve and publish the doctoral course programmes for the next academic year, indicating the courses and the seminars corresponding to each programme and the departments responsible for them. It also specifies the number of places and credits allocated to the various courses and seminars.

A doctoral student must enroll in three kinds of courses (advanced courses in the field, auxiliary subjects, and research methodology) and earn thirty-two credits (one credit = ten hours) during two academic years. A total of twelve credits must be for advanced courses in the field. As for the other courses, the distribution of the number of credits is the responsibility of each university and student.

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As there is no centralized mechanism for the monitoring of knowledge, the teaching staff members of the given department are responsible for assessing or checking the knowledge level of candidates as well as their research aptitudes. When candidates have earned the thirty-two required credits and their research aptitudes have been duly recognized, they are then permitted to submit and defend the doctoral thesis without having to obtain an intermediate degree or qualification.

### **3.4. Dissertation**

Once doctoral candidates have obtained the required numbers of credits for the courses attended, they must prepare an outline of their proposed research projects which must be approved by their supervisors and by the departments concerned. Then each candidate carries out the necessary research and writes a doctoral thesis which is expected to make either a substantial scientific or methodological contribution to the respective field of study or to apply a known method in a new subject. Doctoral students must submit their theses within a maximum of five years after acceptance into a doctoral programme. This period can be extended by the doctoral commission with the prior approval of the given department.

The dissertation should represent an original research work. It can be presented in the form of a monograph as well as a series of contributions. The dissertation may only be submitted in the national language. The abstract of the dissertation is also presented in the national language.

An oral defense of the doctoral thesis before the doctoral commission is the last stage of the doctorate. The commission consists of five members, all of whom should hold doctoral degrees and be specialists in the given or a related field. At least three members must be professors in Spanish universities. It is compulsory to have at least one member from outside the given department or university. A maximum of two academics from other countries may also sit on the commission.

The defense is open to anybody who wishes to attend it, for it is announced in advance by the department or by the university. The official opponents are either the members of the commission themselves or professors holding doctor's degrees who are participating in the public session and who can direct questions at the candidate and make objections.

The doctoral commission is charged with determining whether or not the dissertation is satisfactory. In the former case, it is given the qualification passed, sometimes with an honorary *cum laude*, or unsatisfactory, in which case it is rejected. In case of failure on the final defense, a doctoral student may transfer to another university in which case his or her previously acquired credits may be recognized according to the recognition provisions stipulated in the Decree.



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A copy of the dissertation must be deposited in the general secretariat of the university and in the given department. Copies of the dissertation must also be deposited in the library of the awarding institution and in the national data bank. The titles of the dissertations are published by the university in national scientific publications.

The diploma must include the mention, Doctor in followed by the denomination of the official diploma of Licenciado, Arquitecto, or Ingeniero previously awarded, the contents of the doctoral programme and the department responsible, and the Doctoral Commission in question. Thus, theoretically, there could be as many different denominations of doctoral diplomas as there are different denominations of official diplomas.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctor's degree.

### **5. THE SECOND DOCTOR'S DEGREE**

The possibility of earning a second doctoral degree is not available in Spain.

### **6. RECOGNITION**

The recognition of doctoral diplomas obtained abroad is regulated by Royal Decree 86/16 of January 1987. The Decree establishes that foreign doctoral diplomas can be validated as being equivalent to Spanish doctoral diplomas: In order for a foreign doctoral degree to be validated:

- the previous diploma earned must be recognized as equivalent to the diploma of Licenciado, Ingeniero, or Arquitecto (i.e., the Bachelor's or the Master's degree);
- a form must be filled out to which an expository report on the doctoral thesis (written in Spanish) as well as a copy of it must be annexed.

# SWITZERLAND

## 1. GENERAL INFORMATION

The doctorate in Switzerland is regarded as a stage of postgraduate education. The doctorat/Doktorat is awarded in areas of study such as the arts, education, sciences, engineering, theology, law, economics, and medicine.

In French-speaking Switzerland, the doctorat is defined as a qualification in higher education that is usually granted to candidates who after obtaining the licence, the diplôme, or the diplôme d'Etat have successfully submitted a thesis (these or dissertation). In German-speaking Switzerland, the doctorate is defined as a qualification usually obtained after six to eight semesters of research and study and the submission of a thesis (Dissertation). The Doktorat is obtained either after the Lizentiat, the Diplom, or the Staatliches Diplom.

The system of degrees in higher education is given in the Table below.

Field of study	Number of years elapsed since completion of secondary education					
	3	4	5	6	7	8 ...
1. Education		DiP				H
2. Arts	L	L	L/D	D		H
3. Catholic theology	B		L D			H
4. Protestant theology		L			D	H
5. Law	L	L/D				
6. Economics and political sciences		L		L/D	L/D	D H
7. Administration			L		D	H
8. Exact and natural sciences				DiE	L/D	H
9. Engineering			DiE			D H
10. Medical sciences						
medicine				DiE/L	D	DiS H
dentistry				DiE/L	D	H
pharmacy				DiE/L		D H
veterinary medicine				DiE/L		D H

B - baccalaureat en théologie;

DiP - diplôme de professeur de l'enseignement secondaire

D - doctorat/Doktorat;

DiE - diplôme d'Etat;

DiS - Diplôme de specialization;

H - Habilitation;

L - licence.

**Note:** The above profile indicates the duration of studies following which a specific degree is awarded, taking into account the various study plans in force in each university. It does not mean that each successive degree is compulsory for the subsequent degree.

## SWITZERLAND

### 2. INSTITUTIONAL FRAMEWORK

Higher education in Switzerland is the common responsibility of the federal government and of the cantons. There are no national regulations for doctoral studies except in the case of the federal institutes of technology. The Federal Act on University Aid, 1968, revised in 1991, stipulates the financial participation of the Confederation in the expenses for the running of, and the investments in, cantonal universities as well as the promotion of their co-ordination.

Given the fact that there is no well-defined institutional framework, the organization of doctoral studies and the award of the doctor's degree fall under the responsibility of the higher education institutions themselves (universities and federal institutes of technology). The latter make decisions as to the contents of the doctoral programmes and specify the conditions for the selection of the topics of doctoral theses, of supervisors, and of the members of the academic committees. They also set the conditions under which doctoral theses can be successfully defended.

There is no prior planning as to the number of candidates to be admitted to or the disciplines to be studied in doctoral programmes.

Doctoral students must be enrolled at a university at least during their final semesters, and they must pay an examination fee. During their periods of research, doctoral students are charged no fees. They may receive grants from universities, from private enterprises, or they may themselves pay the costs involved and use the loan system. They may also work as teaching assistants in a part-time employment system.

### 3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE

#### 3.1. Admission

In order to be admitted to doctoral studies, a candidate must hold a licence/Lizentiat, a diplôme/Diplom, or a diplôme d'Etat/Staatliches Diplom with a minimum overall mark. In some French-speaking universities, additional requirements may exist, but they are quite rare. For instance, in law in Geneva, before starting a doctoral programme, the student must first obtain the Diplôme d'études supérieures en droit. There are no restrictions as to age, numerus clausus, national minorities, or quota for foreign students.

Admission to a number of professions, such as the medical profession, dentistry, pharmacy, and food chemistry is regulated by the federal state. Admission to others such as the bar, other legal practice, and teaching is regulated by the cantons.

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The selection procedure varies from one university to another. It is usually based on excellent grades in previous studies, while at other times such criteria as personal research, interviews, or recommendations may be taken into account. As a rule, no entrance examinations are required.

### **3.2. Organization of Doctoral Studies**

Doctoral studies can be both full-time and part-time. The nominal duration of full-time doctoral studies varies from two to four years, while that of part-time studies, from four to eight years. The duration in both cases depends on the subject matter, the availability of sources of facilities, etc.

If the regulations issued by faculties sometimes specify the administrative steps to be undertaken by doctoral students, they do not say anything about the organization of work during the period of doctoral studies and particularly about what the contribution of the supervisor should be. The organization of a specific doctoral programme is not a very common phenomenon, with a notable exception being the practice at the Hochschule St. Gallen für Wirtschafts-, Rechts- and Sozialwissenschaften/Haute école des sciences économiques et sociales de Saint-Gall as well as at certain specialized institutes authorized to award the doctoral degree (e.g., the Institut universitaire des hautes études internationales in Geneva). Doctoral studies in the universities of the francophone part of the country tend to be more structured than those in the Germanophone universities.

Each doctoral student has a specially appointed supervisor (thesis director), a faculty member qualified to supervise studies leading to the degree (promotion), under whose guidance and supervision the doctoral student elaborates his or her dissertation and who acts as one of the referees in the evaluation of the thesis. A student enters a postgraduate course of study by obtaining a supervisor through his or her own efforts.

All full- and part-time professors, including most honorary professors, and university lecturers with at least four-semester of teaching experience, are qualified to supervise doctoral students. The number of doctoral students a supervisor can have at a time is variable. This kind of work is considered to be a part of the supervisor's teaching and research assignments and helps him or her to advance his or her research activities and to gain prestige among colleagues.

Doctoral studies are individually planned. The progress made by a doctoral student is discussed with his or her supervisor. A doctoral student may have meetings with his or her supervisor as many times as needed. He or she may also receive assistance from other members of the department (who are not specially remunerated for this work) as well as from academics from other universities or countries (e.g., a so-called co-tutelle in some cases between certain Swiss and French universities). However, the latter case is rare. Joint supervision and single

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award are generally permitted in the French-speaking universities as a mode of inter-university co-operation in the preparation and award of doctorates.

During the period of doctoral studies, candidates can interrupt and resume studies, do part-time paid teaching or research (often as assistants at the given university), attend international workshops or short courses as part of their training, as well as carry out a part of their required research in other universities or research centres in Switzerland and abroad. The latter possibility depends on the subject of research.

The award of the doctorate may give rise to entitlement to future employment in higher education and research or in industry, depending on the given discipline. The award of the doctoral degree does not necessarily lead to job promotion or salary increase.

### 3.3. Programme

Doctoral studies consist mainly of research, even though there are, in addition to research, doctoral study programmes which include postgraduate courses devoted to the field of specialization. The courses usually consist of seminars and colloquia. Course examinations are normally not required.

### 3.4. Dissertation

Each doctoral student prepares an outline of his or her proposed research project, the topic of which is chosen by him- or herself with the advice of his or her supervisor and must in some cases be approved by the respective faculty (department). Before choosing the dissertation topic and starting to work on it, each doctoral student must make sure that he or she is not redoing previously completed research. Once the topic has been approved, the candidate carries out the necessary research and writes the doctoral thesis.

Certain promotion rules provide that the doctoral dissertation should foster and contribute to the development of science, or at least that it should be «scientifically remarkable». According to other rules, each doctoral student is expected to prove his or her scientific originality in the dissertation. In both cases, the dissertation should be a scholarly piece of work which is expected to make an original scientific or methodological contribution to the given discipline.

The dissertation is presented in the form of a monograph. Any external assistance (from persons or institutions) to which the doctoral student has resorted must be recorded. Quotations must also be recorded, and a complete bibliography must be appended. In exceptional cases, published scientific papers can be considered as doctoral dissertations. In addition to the dissertation, the candidate is required to present an abstract of the latter in a national or in a

## *THE DOCTORATE IN THE EUROPE REGION*

foreign language as well as additional publications which bear on the topic selected. According to established practice, the abstract is disseminated to the institutions concerned in the country.

In addition to the defense (*Rigorosum*), the candidate must sit an oral final examination. The examination is normally linked to the topic of the dissertation. In the past, due to their financial situations, doctoral students could take several years to complete the publication of their theses after passing the *Rigorosum*; today, there is a time limit. After a year at the latest, the doctoral student must hand in a certain number of copies of his or her dissertation to the faculty (approximately 120-200). In case he or she has not yet published his or her dissertation, he or she must make the necessary number of copies at his or her own expense. These copies are distributed to the public academic/scientific libraries. If the deadline for submitting the copies is not met, the doctoral student will be disqualified for the award of his or her doctor's degree.

The defense of the doctoral dissertation (*Doktorprüfung/Examen de doctoral*) is advertised in advance both at faculty level and at the level of the given higher education institution. The oral defense before an academic committee (board of examiners) is the last stage of the doctorate. The defense is public in the francophone universities but not so in the Germanophone higher education institutions. The oral defence is open to anybody wishing to attend it. In francophone universities, official opponents, professors from the respective university or from another university, are designated.

The dissertation is evaluated by a board of examiners. Its members either give expert opinions or vote on the thesis, taking into account the results of the oral examination. The marks that can be attributed to the dissertation are the following: *rite* (satisfactory), *cum laude* (good), *magna cum laude* (very good), *summa cum laude* (excellent). If the examination requirements are not fulfilled or achieved, a repetition of the examination is usually possible within a year. In case of failure on the final defense, the doctoral student usually takes up employment corresponding to his or her previously acquired degrees. The academic committee cannot deliver a lower diploma if the dissertation is not considered to merit the award of the doctorate. A copy of the dissertation must be deposited in the library of the awarding institution and possibly in a national library or in a national data bank. Further copies of the dissertation are available in printed form. According to current practice, the title of the doctoral dissertation is published widely in university publications.

#### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctor's degree.

## SWITZERLAND

### 5. THE SECOND DOCTOR'S DEGREE

The second doctor's degree, the *Habilitation*, is the highest academic degree. It is awarded only in the Germanophone universities. The requirements for its award are more rigorous and much more exclusive than those set for the first doctor's degree .

One of the requirements for the *Habilitation* is an earned doctorate and a certificate proving several years of scholarly/scientific activity (e.g., as an assistant lecturer). The *Habilitation* procedure includes three steps: i) elaboration of a scholarly essay (the *Habilitation* paper); ii) a discussion (colloquy) between the candidate and the members of the teaching board - the appointed *Habilitation* commission - with reference to the address of the candidate; iii) an open or public lecture. Once the examination has been passed, the *Habilitation* paper must, in some universities, be published within a year.

The *Habilitation* is a precondition for the academic profession in the Germanophone universities. After passing this examination, a scholar is given the academic teaching authorization (*venia legends*) for a certain field of study and promoted to the position of *Privatdozent*

The Francophone universities do not offer the *Habilitation*. Instead, a graduate holding a Licence or a Diplôme participates in postgraduate courses, studies abroad, and engages in corresponding research. The doctoral thesis (Doctorat) written during this period is somewhat longer than one which would be written at the Germanophone universities. After award of the doctorate, the person concerned is allowed to teach at the university.

### 6. RECOGNITION

Switzerland being a federal state, the Confederation (the federal government and administration) does not have any competences in the area of recognition of the validity of foreign university diplomas at country level.

As far as the exercise of a profession is concerned, the assessment of the diploma is incumbent on the employer. In return, it is the universities, the higher education establishments, and the faculties which are habilitated to assess the equivalence of a foreign certificate submitted by a person who would like to continue his or her studies in Switzerland. Thus the universities act in keeping with the Directives (of 31 January 1992) of the Conference of Rectors of Swiss Universities «regarding the evaluation of Swiss and foreign diplomas giving access to universities in Switzerland», with the provisions contained in the UNESCO and the Council of Europe Conventions (in particular, the latter's Convention No. 32 concerning academic degrees) to which Switzerland adhered in 1991, as well as with the bilateral treaties on equivalence in higher education concluded with

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Austria (1993), Germany (1994), and between the Swiss and the French Conferences of Rectors of Universities (1994).

From the viewpoint of Swiss jurisprudence, the protection of academic degrees is also essentially a matter pertaining to cantonal law. At the federal level, the use of professional titles is regulated by the federal law on disloyal competition. Nevertheless, a diploma acquired abroad should be delivered in the original language, and the conditions according to which it was awarded by the given university should be stipulated. The country of origin should also be mentioned .



# TURKEY

## 1. GENERAL INFORMATION

In Turkey, the doctorate is regarded as a stage of postgraduate education. Everything concerning doctoral studies is considered as lying within the framework of postgraduate training.

The term, graduate study, which is used in article 3 of the Higher Education Law, covers the training programmes for the higher licence (master's degree), the doctorate, the specialization in medicine, and the proficiency in the fine arts.

In principle, only candidates having a higher licence (master's) degree may be admitted to doctoral programmes. However, graduates of the science and pharmacy faculties may apply for admission to these programmes provided they have earned the title of specialist in a laboratory course organized in conformity with the guidelines established by the Ministry of Health. The normal duration of a doctoral course programme is two years. A third year is required for the preparation of the doctoral dissertation. In addition, doctoral students may be given an extension totalling three semesters for the completion of course work and the doctoral dissertation.

In medicine, the equivalent of a doctorate, the specialization in medicine, leads to specialization in one field of the medical sciences. It is earned in training hospitals which may or may not be attached to the university system. In the field of the fine arts, the graduate work corresponding to a doctorate is called the proficiency in the fine arts.

The system of academic degrees is shown in the Table below.

Field of study	Number of years elapsed since completion of secondary education				
	4	5	6	7	8
1. Education	B		M		D
2. Humanities	B		M		D
3. Theology	B		M		D
4. Fine arts, applied arts, architecture	B		M		D
5. Law	B		M		D
6. Economics and social sciences	B		M		D
7. Administration, business, commerce	B		M		D
8. Exact and natural sciences	B		M		D
9. Engineering, technology	B		M		D
10. Medical sciences		B	B		D
11. Agriculture, forestry, fisheries	B		M		D

B - bachelor's degree;

M - master's degree;

D - doctor's degree.

## **2. INSTITUTIONAL FRAMEWORK**

The higher education system of Turkey is regulated according to the Higher Education Law (Law No. 2547) which went into effect on 6 November 1981. The principles pertaining to graduate studies as a whole and to doctoral studies in particular are determined mainly the regulations which are drawn up by the Interuniversity Board, an academic organ concerned with interuniversity academic matters and co-operation. The Interuniversity Board in accordance with article 65 of the Higher Education Law has the duty to prepare the Regulations on Graduate Education. The specialization in medicine conforms to regulations laid down by the Ministry of Health.

In Turkey, there is no specialized body which carries out the management or the administrative functions of doctoral studies. The universities themselves are authorized to set up doctoral studies (in the case of the medical sciences and for purposes of specialization, hospitals attached to the Ministry of Health may also set up doctoral studies). Prior to 1981, doctoral studies were organized and supervised on a departmental or a faculty basis within the respective faculties of universities. In 1982, these studies were reorganized within the framework of the Higher Education Law. Thus institutes or graduate schools established within universities and faculties have become the principal bodies for doctoral studies. A planning procedure exists as to enrollment in doctoral studies both as to the number of candidates and as to the specialities offered. The carrying out of this procedure is the responsibility of the universities.

Doctoral studies can be financed in several ways: by the state, by doctoral students themselves, by the part-time employment of doctoral students as teaching assistants, and by university grants. Students in postgraduate education are charged no fees. They may also receive scholarships, or they may be appointed for a period of one year at a time to ancillary staff positions.

The route leading to the doctor's degree is described in section 3.

## **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

### **3.1. Admission**

For doctoral programmes, universities set quotas limiting the number of students to be admitted each year. Universities also announce the fields of higher

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The Interuniversity Board consists of the rectors of all the universities and their selected representatives (one full professor from each university). Chronologically, in order of the year of establishment, the rector of one university serves as the Chairman of the Board for one calendar year.

## TURKEY

education having doctoral programmes for which students may sit for the admission or entrance examinations.

The selection procedure is based on entrance examinations (in the field of specialization and in a foreign language) or on the average grades obtained in previous studies. As to the entrance examinations, candidates, while making application for admission to doctoral programmes, state which foreign language tests they wish to take. Those candidates who are successful in the foreign language examination then take the area or subject examination. For specialization in medicine, candidates must take the Entrance Examination for the Specialization in Medicine (*TUS*), which is given twice a year for medical doctors. Unlike the other doctoral entrance examinations, the tests for *TUS* are prepared and the examination itself is conducted for all candidates by the Student Selection and Placement Center (*OSYM*).

Applicants who have a master's degree or a speciality certificate in one of the branches of laboratory work (for graduates of the faculties of pharmacy and of the sciences) and who have earned above average grades in their master's degree programmes may be exempted from taking the entrance examinations, if they are selected by the administrative committees of the given institutes.

The registration procedure of candidates who have been awarded the right to enroll as doctoral students is carried out by the respective institutes of the universities.

### **3.2. Organization of Doctoral Studies**

An advisor for each doctoral student is appointed by the administrative board of the given institute. Advisors are selected from among the full, associate, and assistant professors having at least a doctoral degree. Advisors may usually have around three to five doctoral students at a time. The supervision of doctoral students is considered to be a part of their teaching and research loads.

There is no individual planning of doctoral studies. Doctoral students can meet with their advisors as many times as needed. They can also be assisted by other members of the department as well as by specialists from other countries.

Joint supervision and single award are permitted by the regulations as a mode of interuniversity co-operation in the preparation and the award of doctorates.

During doctoral studies, students may interrupt and resume their studies, engage in part-time teaching and research, carry out parts of their required research in other universities or research centres, and attend international workshops or short courses as parts of their training.

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The award of a doctoral degree creates no entitlement to future employment either in higher education and research or in industry. A doctoral degree is one of the requirements for appointment to an assistant professorship.

### **3.3. Programme**

Programmes of doctoral studies cover both postgraduate courses and research. Courses which are to be taken by doctoral students consist of lectures and seminars; they are determined by the advisors, the given institutes being duly informed. During their periods of study, doctoral students must successfully complete course loads which are equivalent to at least twelve half-year course hours. The minimum passing grade for the courses is seventy-five percent.

The total amount of course time is distributed as follows: around sixty percent for advanced courses in the field; about twenty percent for auxiliary subjects; and approximately twenty percent for research methodology.

Students studying for doctoral degrees take their qualifying examinations after completion of course work. The qualifying examination is conducted by a committee. Its main purpose is to assess the knowledge which candidates have of their subjects. It is generally an oral examination, but in some cases it may include a number of written tests. Unsuccessful candidates may repeat this examination only once.

### **3.4. Dissertation**

After passing the qualifying examination, students prepare outlines of their proposed research projects. If these are accepted by their departments, they then carry out the necessary research and write their doctoral theses. A thesis is expected to make either a substantial scientific or a methodological contribution to the field of study or to apply a known method in a new area.

The specialization in medicine is aimed at the training of medical doctors so that they may acquire special skills and expertise in various fields of the medical sciences.

The proficiency in the fine arts requires the presentation of an original work of art or an outstanding performance and proof of creativity in music, in the visual or the plastic arts, or in the dramatic arts.

A dissertation is presented in the form of a monograph. It is written in Turkish or in a foreign language in those universities in which a foreign language (usually English) is used as the medium of instruction. In addition, each candidate must prepare and deposit an abstract of the dissertation, written both in Turkish and in

## TURKEY

the foreign language in question, which is then deposited at the Documentation Centre of the Higher Education Council.

The titles of dissertations along with summaries are published in national scientific publications. Further copies of dissertations are available in xerox form.

An oral defense of the doctoral thesis before an academic committee is the last step in earning a doctor's degree. The defense is public, open to anybody who wishes to attend it. An academic committee is designated for each dissertation and consists of three to five teaching staff members of the university concerned. In addition, an academic from another university usually sits on the committee.

In case of failure in the final defense, doctoral students may have a second try after modifying their theses or writing new ones.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctor's degree.

### **5. THE SECOND DOCTOR'S DEGREE**

There is no second doctor's degree.

### **6. RECOGNITION**

In Turkey, the legislation concerning the recognition of diplomas and degrees obtained abroad is, in principle, limited to a few provisions in various laws which only designate the responsible bodies in this domain. The organizational procedural, and evaluational arrangements are left to the decisions of these bodies. For doctoral degrees obtained abroad, the responsible body is the Interuniversity Board which has been described above.

The Higher Education Law, in article 11/b (5), states that, «decisions on the basic principles of doctoral education and assessments of the doctoral degrees and the associate and full professor titles obtained abroad fall within the competence of the Interuniversity Board».

The Interuniversity Board has a permanent secretariat headed by a Secretary General. Its seat is at the headquarters of the Higher Education Council. Applications for recognition should be addressed to the Secretariat of the Interuniversity Board and either delivered in person or sent by mail.

The documents required are the following:

- a copy of the doctoral diploma and a Turkish translation, both certified by a notary;

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- a copy of the doctoral dissertation (thesis).

A committee of three professors, set up by the Interuniversity Board, evaluates each doctoral degree obtained abroad and submits its recommendation to the Board for final decision. Each decision is reached after a vote taken during a meeting of the Interuniversity Board.

For the specialization in medicine, a competitive selection examination is held for persons holding the doctor of medicine (M.D.) degree. This examination and specialization in the various branches of medicine are only open to Turkish citizens. Foreign citizens who have the M.D. degree or are medical specialists should apply to the Equivalence Bureau of the Higher Education Council for recognition of their diplomas. Their training for specialization in a branch of medicine is assessed by a Commission at the Ministry of Health.

The multilateral conventions in which Turkey participates relating to the recognition of degrees are as follows:

- the Council of Europe European Convention on the Equivalence of Periods of University Study; Turkey signed the Convention in 1957;
- the Council of Europe Convention on the Equivalence of Diplomas Leading to Admission to Universities; Turkey adopted the Convention in 1957;
- the UNESCO Regional Convention on the Recognition of Studies, Diplomas, and Degrees in Higher Education in Asia and the Pacific; Turkey signed this Convention in 1983 and ratified it in 1987;
- the UNESCO International Convention on the Recognition of Studies, Diplomas, and Degrees in Higher Education in the Arab and European States Bordering on the Mediterranean;
- the UNESCO Convention on the Recognition of Studies, Diplomas, and Degrees concerning Higher Education in the States belonging to the Europe Region, signed in 1979;. Turkey ratified it in 1988.

Turkey has bilateral agreements on education, culture, and exchange of students and academics with many countries. There are few specific references in these agreements to «co-operation» or «exchange of information» for purposes of the recognition of diplomas and degrees; however, the Cultural and Scientific Exchange Agreement with the Arab Republic of Egypt for 1985-1986 does mention «co-operation» and «exchange of information».

Turkey has not concluded any bilateral agreements which bear directly on the recognition of diplomas and degrees.

# UKRAINE

## 1. GENERAL INFORMATION

The doctorate in Ukraine is the capstone of the training system for higher academic/scientific personnel who are employed primarily in higher education institutions and in research institutes.

The hierarchy of advanced degrees includes two levels of doctoral degrees: the Candidate of Sciences degree and the Doctor of Sciences degree. The Candidate of Sciences degree normally requires at least three years of study following graduation from a university or other higher education institution in which the so-called higher education diploma (Master's degree) was earned. The Doctor of Sciences degree - in theory - requires a further three years of study beyond the Candidate of Sciences degree. In reality, to earn a Doctor of Sciences degree requires, on average, nine to eleven years.

Citizens of Ukraine who have been conferred the Candidate of Sciences or the Doctor of Sciences degrees are awarded state diplomas having a set format. Citizens of other countries and citizens of Ukraine who leave the country may have a diploma supplement added to the corresponding scientific degree. It can be written in English or in French (according to individual choice). The supplement indicates the educational level represented by the given diploma and lists the recognized academic degrees of other countries which the person has earned. The Candidate of Sciences and the Doctor of Sciences degrees are usually analogous to those of the PhD and Doctor of Sciences respectively.

The degree system of higher education in Ukraine is given in Table 1 below.

**Table 1**

Field of study	Number of years elapsed since completion of secondary education					
	5	6	7	8	9	10 ...
1. Education	Di(M)			D1		D2
2. Humanities	Di(M)			D1		D2
3. Religion, theology	Di(M)			D1		D2
4. Fine arts, applied arts, architecture	Di(M)			D1		D2
5. Law	Di(M)			D1		D2
6. Economics and social sciences	Di(M)			D1		D2
7. Administration, business, commerce	Di(M)			D1		D2
8. Exact and natural sciences	Di(M)			D1		D2
9. Engineering, technology		Di(M)			D1	D2
10. Medical sciences		Di(M)			D1	D2
11. Agriculture, forestry, fisheries	Di(M)			D1		D2

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- Di - diploma of higher education;
- M - Master's degree;
- D1 - Candidate of Sciences degree;
- D2 - Doctor of Sciences degree.

### **2. INSTITUTIONAL FRAMEWORK**

Doctoral studies are regulated by the Ukrainian Law on Education and by the Regulations on Postgraduate and Doctoral Studies.

Two national bodies, the Ministry of Education and the Academy of Sciences, are responsible for managing and administering doctoral studies in higher education and research institutions, respectively. Upon the decision of these two bodies, doctoral study programmes (aspirantura - for the Candidate of Sciences degree and doctorantura - for the Doctor of Sciences degree) can be opened in those higher education and research institutions which possess the required scientific, financial, and personnel resources.

Each institution having doctoral study programmes must draft a plan as to the number of candidates and specialities. The same planning at national level is carried out by the Ministry of Education and the Academy of Sciences.

The financing of doctoral studies comes from the state budget as well as from organizations which are interested in employing highly qualified personnel.

The two doctor's degrees can be earned in two ways: by enrolling in aspirantura or doctorantura programmes or through independent study and research.

### **3. THE MAIN ROUTE LEADING TO THE DOCTOR'S DEGREE**

The main route leading to the Candidate of Sciences degree is a postgraduate studentship known as aspirantura. A postgraduate student is known as an aspirant.

#### **3.1. Admission**

Citizens of Ukraine having a higher education diploma (Di) or a Master's degree are admitted to postgraduate studies. Entrants to medical specialities should also have at least two years of practical experience in the corresponding speciality. Citizens of other countries are admitted to postgraduate studies in Ukraine according to treaties and agreements.

The Ministry of Education and the Academy of Sciences set quotas with regard to admission to higher education establishments and to research institutions, respectively, limiting the number of students to be admitted each year.



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They also set the fields of studies and specialities for which students must take and pass admission examinations.

The selection procedure is based not only on entrance examinations, but also on interviews, recommendations, and personal research. Applicants for an aspirantura take entrance examinations in the given speciality, in philosophy, and in one foreign language.

The registration procedure for candidates who have earned the right to enroll as aspirants is carried out by the respective higher education or research institution.

### **3.2. Organization of Doctoral Studies**

Doctoral studies can be both full-time and part-time (by correspondence). The nominal duration of full-time studies is three years and that of part-time studies, four years.

Each doctoral student has a specially appointed supervisor who must be a holder of the Candidate of Sciences or the Doctor of Sciences degree. A supervisor can have up to five postgraduate students at a time. This kind of work does not entail extra remuneration but is considered to be a part of the normal teaching and research load of a university teacher or researcher.

A postgraduate student works according to his or her individual plan of studies, the progress of which is assessed annually by his or her supervisor. In case a student fails to complete his or her individual plan of study, he or she is expelled. A doctoral student can have meetings with his or her supervisor as many times as needed. He or she can also receive help from other members of the given institution as well as from academics coming from other countries, but the latter case is rare. Joint supervision and single award are permitted as a mode of inter-university co-operation in the preparation and award of the Candidate of Sciences degree.

During the period of postgraduate studies, a student may interrupt and resume studies, carry out part of his or her required research in other institutions, attend international workshops or courses as part of his or her training, and undertake part-time teaching and research. The latter is remunerated at up to half of the salary corresponding to a research or a teaching post.

Full-time postgraduate students are awarded grants by the state. The period of studies is included in the student's general record of scientific work and teaching. Part-time postgraduate students are also encouraged in a number of ways. For instance, each year they are accorded additional annual leave.

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Students who have completed a postgraduate course programme have an advantage when applying for teaching positions at higher education institutions or for research positions in research institutions. For someone who is already employed in a higher education or a research institution, the award of the Candidate of Sciences degree leads to a salary increase or a better paid position (for example, when a junior lecturer obtains the degree of Candidate of Sciences, he or she automatically receives a salary increase of sixteen percent; if he or she is transferred to an associate professor's position, he or she will receive a salary increase of thirty percent). Possession of the Candidate of Sciences degree is an advantage when seeking an appointment as associate professor (docent).

### 3.3. Programme

Doctoral studies programmes (for the Candidate of Sciences) include both postgraduate courses and research. Doctoral students take both lecture courses and seminars. The total amount of course time is distributed as follows: around fifty percent for advanced courses in the field; about ten percent for auxiliary subjects; around twenty-five percent for research methodology; and approximately fifteen percent for a foreign language. Table 2 gives a sample of a doctoral studies syllabus .

**Table 2**

Subjects	Course time (in hours)
1. Foreign language	150
2. Philosophy	120
3. Speciality	200
4. Pedagogics and psychology	100
5. Practical teaching	50
6. Economics	75
7. Basics of computer science	75
8. Other subjects as per speciality	upon the decision of the Scientific Council
9. Research according to the dissertation subject (theoretical and experimental research, publications, participation in seminars, conferences, etc.)	3740

During postgraduate studies, a student must take qualifying (Candidate) examinations in the given speciality, in philosophy, and in a foreign language and additional examinations in subjects designated by the Scientific Council of the degree-granting institution.

### 3.4. Dissertation

In the course of postgraduate studies, a student must complete, present, and defend a dissertation in order to be awarded the Candidate of Sciences degree. Dissertation topics should generally correspond to the scientific areas represented by the basic projects undertaken by the awarding institution and be approved by its Scientific Council.

A dissertation for the degree of Candidate of Sciences should be a scholarly work which presents and describes a new way of solving a problem of particular importance for the corresponding area of knowledge or which presents scientifically-based technical, economics-based, technological, and other research undertaken by the author in order to solve important practical problems. A completed dissertation should have the form of a monograph, that is, of a scientific work setting forth the ideas and research findings of an author, so that he or she can defend them publicly and give proof of a personal contribution to science.

A dissertation can also take the form of a scientific report which summarizes the results of the research undertaken and published by an applicant and having importance both for science and practice.

An applicant must also present publications reflecting the general outcomes of his or her research. He or she can also present certificates of inventions and discoveries, industrial samples, patents, algorithms, new materials, etc.

The dissertation, along with the results of the expertise undertaken by the institution in which the research was undertaken, are presented by the author to a Specialized Council for its final appraisal.

Upon the approval of the Specialized Council, an abstract of the dissertation (up to twenty-four pages) is published. It should present the basic ideas and outcomes of the research, indicate its degree of originality, and assess the possibilities for practical applications.

The abstract is distributed to the members of the Specialized Council, to the organizations concerned, and to leading scholars in the given field.

The defense of the dissertation takes place before the Specialized Council. Specialized Councils are organized by the Higher Qualifying Commission to assess dissertations in given fields of knowledge in those higher education establishments and research institutions which are acknowledged for their achievements in the respective field of science. They are standing bodies with terms of office of five years. A Specialized Council is composed of holders of the Doctor of Sciences and the Candidate of Sciences degrees. Its total membership should not be fewer than nine, of which no fewer than three members should hold the Doctor of Sciences degree.

## *THE DOCTORATE IN THE EUROPE REGION*

The Specialized Council appoints two official opponents, one of whom is a Doctor of Sciences and the other - either a Doctor or a Candidate of Sciences. Each official opponent presents a review of the dissertation to the Specialized Council, stating that it complies with the set requirements. An official opponent is officially responsible for certifying the objectivity and the quality of a given review. The official opponents must be present at the defense of the dissertation.

The public defense of the dissertation takes the form of a scientific discussion. The defense is open to anybody who wishes to attend it. The Specialized Council reaches a decision by secret ballot. The decision is valid if at least two-thirds of the members of the Specialized Council take part in the deliberations. A pass requires a positive vote of the least two-thirds of those present. In the case of failure, the defense can be repeated in a year.

The decision of the Specialized Council is reviewed and approved by the Higher Qualifying Commission, following which the applicant receives the Candidate of Sciences diploma.

A copy of the dissertation must be deposited in the library of the degree-granting institution and the national library as well as in the national data bank. Further copies of the dissertation are available in microfilm form.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

Another route leading to the Candidate of Sciences degree is that of outside aspirantura. In this case, the applicant is associated with a higher education establishment or research institution for tutoring in specialized subjects, in a foreign language, and in philosophy according to the given post-graduate programme, and for taking qualifying examinations and preparing a dissertation.

A supervisor for each applicant is appointed by the institution with which he or she is associated, and possibilities for using libraries, laboratories, and other facilities are made available. Doctoral studies are financed either by the applicant's employers (from the budget for personnel training) or by the applicants themselves. This route must fully conform to the general rules for the taking of Candidate examinations and for the defense of Candidate dissertations.

### **5. THE SECOND DOCTOR'S DEGREE**

The second and highest scientific degree is the degree of Doctor of Sciences. Dissertations are prepared either on a full-time basis during doctoral studies in doctorantura or independently, as outside doctorantura. In the latter case, each candidate is awarded sabbatical leave (up to six months) or an appointment to a research position (up to two years in the case of lecturers). He or she may also be sent on a scientific mission abroad (up to ten months).

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The number of doctoral students enrolled in full-time doctoral programmes is about twenty percent of the total number of researchers who are working, at any one time, on their doctoral dissertations. Full-time doctoral programmes in Ukraine were opened in 1987 and are now in operation in thirty-four leading higher education establishments and in sixteen research institutions.

Admission to full-time doctoral programmes is competitive. The official duration of studies is three years. Among the main admission criteria are the scientific achievements of each applicant in a chosen speciality, presentation of a full-scale outline of the prospective dissertation, scholarly publications, and recommendations from employers with regard to research potential.

The doctoral studies programmes consist of research. An individual study plan must be approved by the Scientific Council of an educational or a research institution. A scientific consultant holding the Doctor of Sciences degree is appointed to advise each doctoral student with regard to his or her dissertation research. The main goal of a doctoral student is to complete and to defend a dissertation so as to qualify for award of the advanced degree of Doctor of Sciences .

During their periods of study, doctoral students will be awarded state grants, the amounts of which will not be less than the salaries which they were earning during their most recent periods of employment. Upon the completion of their doctoral studies, the students return to the same positions in the same institutions in which they had been working.

The qualifying requirements for a doctoral dissertation are higher than those for a Candidate dissertation. The dissertation for the degree of Doctor of Sciences should be a scientific work in which an important scientific problem, having an economic or socio-cultural or political value, is solved; or it should present scientifically-based technical, economic, or technological ideas, the implementation of which would make a considerable contribution to scientific and technological progress.

The Specialized Council for the defense of dissertations for the Doctor of Sciences degree consists of Doctors of Science. The same council may also conduct the defense of dissertations for the Candidate of Sciences degree. The Specialized Council appoints three official opponents for a doctoral dissertation who are Doctors of Science.

The defense and the approval procedures for the degree of Doctor of Sciences are analogous to those of the Candidate of Sciences degree.

The degree of Doctor of Sciences is a prerequisite for appointment to the post of professor in a higher education institution.

## **6.RECOGNITION**

The assessment of credentials of scientists and lecturers who are citizens of Ukraine but hold advanced degrees conferred upon them in foreign countries and the nostrification of these degrees are the responsibility of the Higher Qualifying Commission, upon the recommendation of the employers of the persons concerned .

The package of documents necessary for the assessment procedure consists of the following:

- i. The employers' request for assessment, stating the advanced degree for which the applicant is to be assessed as well as the date and number of the permit to defend a thesis abroad; and for postgraduate (doctoral) students, a copy of the permit to enroll in postgraduate (doctoral) programmes abroad;
- ii. A curriculum vitae;
- iii. Certified copies of the higher education diploma, the diplomas and certificates attesting the applicant's scientific degrees and titles, including a legally certified copy (in Ukrainian or Russian) of a document stating the degree conferred in a foreign country;
- iv. The list of the applicant's scientific publications signed by the applicant and certified by the employing organization;
- v. The translation of the dissertation (the first copy) into Ukrainian or Russian;
- vi. References covering scientific, teaching, and professional activities signed and stamped by the employer.

The package of documents necessary for nostrification is as follows:

- i. The employer's request for nostrification. The presentation should state the advanced degree to which a degree conferred abroad is considered equal. It should also state the dissertation subject, the date and number of the permit to defend a dissertation abroad, and for a postgraduate (doctoral student), a copy of the permit to study abroad;
- ii. A curriculum vitae;
- iii. A legally certified copy (in Ukrainian or in Russian) of the document stating the degree conferred, which is to be nostrified;
- iv. References covering scientific, teaching, and professional activities.

# UNITED KINGDOM

## 1. GENERAL INFORMATION

In the United Kingdom, there are doctorates of two levels. The first doctoral degree, the Doctor of Philosophy degree (PhD or DPhil), is a postgraduate research degree obtainable in areas of study including the sciences, the arts, engineering, and law (the area of study, however, not being indicated in the title of the degree).

Normally the PhD degree requires at least three years of full-time study after completion of a good first (bachelor's) degree. It is not usually possible to register immediately for a PhD unless one has a research Master's qualification or a Postgraduate Diploma. Most United Kingdom universities require a candidate without postgraduate research experience to register initially for an MPhil or a similar research degree. If progress is satisfactory, this registration can later be converted to PhD registration.

The second doctoral degree, the Higher Doctorate, is conferred in recognition of an outstanding contribution to scholarship in a particular field and is usually awarded to persons of high academic distinction and on the basis of previously published work.

The system of academic degrees is presented in the Table below.

Field of study	Number of years elapsed since completion of secondary education						
	3	4	5	6	7	8..	
1. Education		BEd	MEd	MPhil	PhD	DLitt(Ed)	
2. Arts	BA	MA	MPhil	PhD		DLitt	
3. Religion, theology	BD	MTh	Mphil	PhD		DD	
4. Fine arts	BA	MA	MPhil	PhD			
5. Law	LLB	LLM	MPhil	PhD		LLD	
6. Economics and social sciences	BSc	MSc	MPhil	PhD		DSc(Econ)	
7. Administration, business, commerce	BA	MBA	MPhil	PhD			
8. Exact and natural sciences	BSc	MSc	MPhil	PhD		DSc	
9. Engineering, technology	BSc/BE	MSc/ME	MPhil	PhD		DSc(Eng)	
10. Medical sciences							
medicine			MB,BS	MSc/MS	Mphil	MD	DSc(Med)
dentistry			BDS	MDS	Mphil	PhD	DSc
pharmacy	BPharm	MSc	MPhil	PhD			DSc
veterinary medicine			BVM	MSc	Mphil	DVM	DSc
11. Agriculture	BSc	MSc	MPhil	PhD			DSc

## THE DOCTORATE IN THE EUROPE REGION

BA	- Bachelor of Arts;	MBA	-Master of Business Administration;
Bsc	- Bachelor of Science;	ME	- Master of Engineering;
Bed	- Bachelor of Education;	MS	- Master of Surgery;
BD	- Bachelor of Divinity	M DS	- Master of Dental Surgery;
LLB	- Bachelor of Laws	MPhil	- Master of Philosophy;
BE	- Bachelor ofEngineering;	PhD	- Doctor of Philosophy;
Bpharm	- Bachelor of Pharmacy;	MD	- Doctor of Medicine;
MB, BS	- Bachelor of Medicine + Bachelor of Surgery;	DVM	- Doctor of Veterinary Medicine;
BDS	-Bachelor of Dental Surgery;	DLitt	- Doctor of Literature;
BVM	- Bachelor of Veterinary Medicine;	DLitt(Ed)	-Doctor of Literature (Education);
MA	- Master of Arts;	LLD	- Doctor of Laws;
Msc	- Master of Science;	DD	- Doctor of Divinity;
Med	- Master of Education;	DSc	- Doctor of Sciences;
Mth	- Master of Theology;	DSc(Eng)	-Doctor of Sciences (Engineering);
LLM	- Master of Laws;	DSc(Econ)	- Doctor of Sciences (Economics);
		DSc(Med)	- Doctor of Sciences (Medicine).

### Notes:

1. All references are to full-time study. and to nominal lengths of courses.
2. Although Bachelor's degrees are normally of three year's duration, some degree programmes last four years, particularly language programmes and sandwich courses. In Scotland, first degrees are normally of four years' duration.

## 2. INSTITUTIONAL FRAMEWORK

There are no national regulations for doctoral studies in the United Kingdom, and the PhD is not subject to centralized regulation either with respect to content or duration of studies. Universities in the United Kingdom are autonomous institutions with their own regulations regarding admission and degree completion requirements. The Privy Council grants universities the right to award degrees, including doctoral degrees. Research institutions also have the right, albeit a very limited one, to set up doctoral studies, for example, the Royal Institution. The names of United Kingdom institutions which have been accorded the right to award degrees under Royal Charter or Act of Parliament are published by the Department for Education (DFE). Foreign degrees may also be awarded by institutions in the UK, but the names of the latter are not published by the DFE.

Although there are no national regulations, doctoral programmes normally require relatively senior academic members of staff active in research to supervise students and adequate library and laboratory facilities. Quality and standards are underwritten by a system of quality audit, operated jointly by the higher education institutions and by the external examiner system. Guidelines are published by the Higher Education Quality Council (HEQC) on behalf of institutions collectively.

There is prior planning as to the number of candidates and specialities. It is carried out by the universities as well as by the Research Councils and the British Academy.



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The main sources of financial support for PhD students are research studentships awarded by the Research Councils and by the British Academy:

- The Science and Engineering Research Council (SERC) is the largest source of funds. It offers studentships for research into the sciences, for example, physics, astronomy, biotechnology, and engineering. On 1 April 1994, the SERC was succeeded by the Engineering and Physical Sciences Research Council (EPSRC) and the Particle Physics and Astronomy Research Council (PPARC). The SERC's current responsibility for the biological sciences will be transferred to a new Biotechnology and Biological Sciences Research Council (BBSRC) incorporating the AFRC (see below).
- The Natural Environment Research Council (NERC) provides funds for research studentships covering environmental sciences, including marine biology, geology, and atmospheric chemistry.
- The Medical Research Council (MRC) offers studentships to those candidates qualified to undertake medical research.
- The Agricultural and Food Research Council (AFRC) offers awards in areas which underpin agriculture, food, and related biological sciences. As of 1 April 1994, the funding of research in these areas will be provided by the new Biotechnology and Biological Sciences Research Council (BBSRC).
- The Economic and Social Research Council (ESRC) is responsible for the support of postgraduate studies in the social sciences, offering research studentships in areas such as economics, politics, and psychology.
- Research studentships for the arts and the humanities are offered by the British Academy which is in the process of establishing a new Humanities Research Board. The Board will assume responsibility for most of the publicly funded grant-giving functions at present performed by the Academy - mainly research grants and postgraduate studentships in the humanities.

Other sources of financial support for PhD students include university scholarships and awards; industrially-oriented studentships, for example, the Collaborative Awards in Science and Engineering (CASE); part-time employment as teaching assistants; charitable foundations; and private funding.

Award schemes for overseas students who would like to pursue PhD studies in the United Kingdom include: the British Council Fellowship Programme; the Commonwealth Scholarship and Fellowship Plan (CSFP); and the Overseas Research Student Awards Scheme (ORSAS).

### **3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE**

#### **3.1. Admission**

Admission to a PhD programme in the United Kingdom typically requires a first or upper second class bachelor's degree (or equivalent). Candidates with a Master's degree or a Postgraduate Diploma (or equivalent) are registered directly for the PhD programme. Candidates who do not hold a postgraduate research qualification are usually registered initially for the MPhil or a similar research degree. If progress is satisfactory, they may then transfer to a PhD programme.

Universities may also consider applications from candidates without a good bachelor's degree or postgraduate research qualification if they can demonstrate their potential for higher degree work, for example, by presenting published work or by offering relevant work experience (normally university or industry-related). No other restrictions concerning age, national minorities, or quota of foreign students exist.

Normally residence on campus is required. Students are registered for a minimum of two academic years of full-time study or the equivalent in part-time study.

Selection procedures for the PhD degree course are varied across the university sector. Generally grades of previous studies and references from academic tutors are considered. Most candidates also attend an interview. Other criteria for selection, depending on individual universities and candidates, may include a corresponding master's thesis, personal research, and relevant work experience. Entrance examinations for PhD course programmes are not common practice. Universities may require overseas students to undertake an English language proficiency test as part of the admissions procedure.

#### **3.2. Organization of Doctoral Studies**

Doctoral studies can be full-time or part-time, normally with durations of three to four and of five to six years respectively.

The management and administration of doctoral studies within United Kingdom universities are usually vested in a university department. Each doctoral student has a specially appointed supervisor, who is usually a senior member of the academic staff. The maximum number of students that a supervisor can have at a time depends on university regulations and guidelines. University departments set their own limits, depending on the subject of study. A supervisor is not paid an additional fee for this kind of work. The main incentives for doctoral

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supervision are the fulfillment of teaching and research requirements and the strengthening of a research team.

The frequency of meetings between a PhD student and a supervisor is subject to mutual agreement. Meetings usually take place as often as required. A student may also have the option of enlisting the support of other members of the department and of academics from other universities, or from other countries. Those students supported by industrially-oriented studentships such as CASE (Collaborative Awards in Science and Engineering) receive co-operative guidance and supervision from the participating universities and their industrial partners. Doctoral studies are individually planned by a PhD student and his or her supervisor in line with the doctoral course programme, and the progress made is discussed with the supervisor and in seminars.

During PhD studies, a student may (subject to the particular regulations of the university) interrupt and resume studies; undertake part-time paid teaching work; and carry out part of the required research in other universities or research centres. A student may also have the opportunity to attend international workshops or short courses in the United Kingdom and abroad.

The award of a PhD degree, while advantageous in many fields, does not entitle the holder to future employment in higher education, research, industry, or elsewhere. A doctoral degree may result in job promotion or salary increases, but this is not an automatic entitlement.

### **3.3. Programme**

Although some PhD programmes are based only on original research (particularly in the humanities), increasingly they include both postgraduate courses and research. Courses are usually made up of lectures and seminars mainly covering advanced courses in the field, research methodology, and foreign language work (when appropriate). The amount of time devoted to each course varies according to the university and to the area of study. Each course component is examined separately, and examinations may be oral or written, or a combination of both.

In the United Kingdom, the MPhil or the MSc degree is often required before the candidate proceeds to a PhD award. In some cases, it is compulsory to achieve the research Master's degree before proceeding to the doctoral degree.

### **3.4. Thesis**

The submission of a thesis based on original research is the major requirement for the award of the PhD degree. The title of the thesis must be approved by the candidate's supervisor, and, in some cases, by the university department. This approval is then notified to the university on the examination entry form. Each

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candidate is required to submit a short description (abstract) of the content of his or her thesis with the entry form in order to assist in the appointment of suitable examiners.

A thesis for the PhD degree must be a distinct contribution to the knowledge of the subject and afford evidence of originality shown by the discovery of new facts and/or by the exercise of independent critical power. The thesis is expected to indicate the candidate's knowledge of research methodology. A full bibliography and references are required.

The candidate's thesis is presented in the form of a monograph in the national or in a foreign language. The thesis is forwarded to the examiners appointed by the university, who are typically experts on the subject matter of the thesis. Normally there are two examiners: one, an external examiner, the other usually from the candidate's department. When the supervisor is exceptionally appointed as an internal examiner, a third examiner (either internal or external) may be appointed. Examiners are appointed by the university for each thesis presented for PhD examination.

After reading the thesis, the examiners may require the candidate to undertake an oral examination. The examiners may also require the candidate to undergo a written or practical examination, or both.

If, in the opinion of the examiners, the candidate has not reached the standard required for the award of the PhD degree or for the representation of the thesis in a revised form for that degree, they may recommend that the MPhil degree be awarded.

Following the award of a PhD degree, the thesis is usually deposited in the library of the awarding institution. Subject to certain conditions, a thesis can be made available for public reference, inter-library loan, and copying (in the form of microfilm and Xerox). A copy of the abstract of the thesis is usually included in published lists of theses offered for higher degrees in United Kingdom universities.

### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the PhD degree.

### **5. THE SECOND DOCTOR'S DEGREE**

A higher doctorate degree, the highest academic degree in the United Kingdom, may be awarded by a university for published work of a high standard containing original contributions to the advancement of knowledge and learning, which have given the candidate distinction in his or her field of study. Higher Doctorates are awarded mainly by the following university faculties:

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- Faculty of Arts: Doctor of Literature (DLitt.);
- Faculty of Science: Doctor of Sciences (Dsc.);
- Faculty of Laws: Doctor of Laws (LLD.);
- Faculty of Theology: Doctor of Divinity (DD.);
- Faculty of Music: Doctor of Music (DMus.).

### **6.RECOGNITION**

In the United Kingdom, there is no national policy regarding equivalences of qualifications awarded abroad. The evaluation of overseas qualifications for the purpose of gaining admission to university courses is undertaken by the individual institutions. In addition, anyone holding overseas qualifications wishing to practice a profession in the United Kingdom will generally be required to submit his or her application to the relevant professional body for assessment.

The European Union General Directive on the Recognition of Diplomas has been ratified by the United Kingdom, but it refers, in the main, to first degrees.

Advice and information regarding the recognition of qualifications can be sought from the Network of National Academic Recognition Information Centres (NARIC) of the European Union. Established in 1984 as part of the ERASMUS programme, the network aims at improving the academic recognition of qualifications and periods of academic study in the European Union Member States and in the countries of the European Free Trade Association (EFTA). All European Union and EFTA states have designated national centres which provide information and advice concerning recognition of overseas qualifications. The United Kingdom NARIC office is run by the British Council. The main users of this service are higher education institutions, students, teachers, and prospective employers. The final decision regarding the recognition of a foreign qualification is taken by the institution from which admission is being sought.

The recognition of overseas doctoral degrees is normally undertaken by university specialists in the field of study, and each case is treated on an individual basis. Generally there is no distinction drawn between recognition for purposes of an academic appointment or for post-doctoral study. Partial recognition of a doctorate is not possible. No overseas doctoral qualifications are automatically recognized .

# UNITED STATES OF AMERICA

## 1. GENERAL INFORMATION

The doctorate is the highest academic degree awarded in the United States. It is a highly specialized degree having as its principal purpose the training of researchers for the in-depth exploration of their fields of specialization.

In the United States, the doctorate relates to graduate education. The term graduate education (referred to in many countries as postgraduate education) usually refers to degree-granting programmes that require the equivalent of the US bachelor's degree as the minimum condition defining eligibility for admission.

Historically, doctoral degree programmes were those leading to the Doctor of Philosophy (PhD) degree in the arts and sciences. Today, many areas outside of the arts and sciences (for instance, engineering, education, business, agriculture) grant this degree and, in addition, many other doctoral degree programmes have been developed.

The doctorate is an advanced programme of higher education which normally requires at least three years of study from completion of the bachelor's degree or two years from the master's degree. In fact, the completion of a PhD requires more time than these minima.

There are two types of doctor's degree: the research doctorate and the professional doctorate. The central issue in research-oriented programmes is the state of knowledge in a discipline. The central issue in professionally oriented programmes is the state of practice in a profession. The research doctorate is usually awarded after the master's degree, but in some institutions it is the only degree awarded after the bachelor's degree. The professional doctorate is obtained after advanced studies in such fields as medicine, pharmacy, dentistry, architecture, and engineering. The holder of a research doctorate, regardless of the specific subject, is called a doctor of philosophy (PhD); whereas the holder of a professional doctorate indicates the subject (for instance, doctor of medicine). It is possible to obtain a research doctorate after obtaining a professional doctorate.

The system of academic degrees is shown in the Table below.

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Field of study	Number of years elapsed since completion of secondary education							
	4	5	6	7	8	9	10	11
1. Education	B	M	ES	D				
2. Humanities	BA		M		D			
3. Religion, theology	BA			B/M		D		
4. Fine arts, applied arts	B		M		D			
5. Architecture		B		M		D		
6. Law	BA			B	M		D	
7. Economics and social sciences	BA		M		D			
8. Administration, business, commerce	B		M		D			
9. Exact and natural sciences	BS		M		D			
10. Engineering, technology		B		M		D		
11. Medical sciences								
medicine	B/BS				D(P)	M		D
dentistry	BS				D(P)	M		D
pharmacy		B		M		D		
veterinary medicine	BS				D(P)	M		D
12. Agriculture, forestry, fisheries	B		M		D			

- B - bachelor's degree (with mention of the field);  
 BA - bachelors of arts;  
 BS - bachelors of science;  
 D - doctor's degree (doctor of philosophy);  
 D(P) - doctor's degree (professional title medicine, etc );  
 ES - education specialist;  
 M - master's degree.

## 2. INSTITUTIONAL FRAMEWORK

There are no national regulations for doctoral studies, and there is no national body in the country which carries out the management or the administration of doctoral studies. Universities in the United States are highly autonomous, and they themselves are authorized to set up doctoral studies and to confer the doctoral degree. The right to set up doctoral studies is granted to the public universities by the authorities of the federal states.

Typically, the administration of doctoral degree programmes is carried out at three distinctly different administrative levels: the graduate division or school, the department or programme, and the faculty or dissertation adviser.

Institutions offering graduate work leading to the PhD degree are typically organized into schools, colleges, faculties or divisions, and departments comprising faculty with a wide variety of scholarly and research interests. Although governing boards are legally responsible for the activities of their institutions, they delegate operational responsibility to the chief administrative officer. In turn, the faculty are given responsibility for the nature and functioning of the academic programmes and are administratively responsible to department heads, deans, and the academic officers of the central administration.

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Although there are several different kinds of administrative structure for graduate education, two models predominate, and most others are variations on these two. In one, the graduate division is responsible for all graduate degrees offered by the institution. According to this model, all graduate committees and graduate students are responsible to the graduate dean, and final determination that degree requirements have been met is the responsibility of the dean. In the second model, there is a graduate school of arts and sciences, and the sphere of the graduate dean's authority may be limited to departments and colleges in the area alone. Professional schools in this structure are responsible for their own graduate programmes.

Graduate departments should set forth explicit guidelines and procedures for completing degree requirements so that the students and faculty know and understand their opportunities, duties, and responsibilities. These guidelines include the objectives of the doctoral programme, the departmental requirements beyond those of the graduate division, the reading lists for comprehensive examinations, and if relevant, the testing dates, the course and seminar offerings, the research specialities offered, and the faculty responsible for these offerings. In addition, departments, in co-operation with the graduate division, provide information on sources of funding, both within and from outside the university.

There is prior planning both as to the number of candidates and specialities. Universities announce the list of doctoral degree programmes which they are prepared to support and set quotas as to the number of candidates which they are able to accept. Several factors limit the number of students which any programme can accept. Among the most important are the numbers of professors and their specific interests, the amount of space required (particularly in laboratory fields), computing and library resources, and, in research-oriented programmes, the availability of money and equipment needed to carry out the research.

The financing of doctoral studies can come from different sources: the Federal government, the states, private organizations, and the doctoral students themselves. Most financial assistance for highly qualified students is provided in the form of loans, scholarships, fellowships, and assistantships. Scholarships and fellowships are usually grants which require no service on the part of the recipients. Assistantships usually require recipients to perform some service for the university such as aiding faculty members in teaching or in conducting research. In return for the service, which may or may not be a stated degree requirement, the assistants are provided stipends and apprentice-like teaching and research experience.

The route leading to the doctor's degree is described below.



### 3. THE ROUTE LEADING TO THE DOCTOR'S DEGREE

#### 3.1. Admission

Since most programmes have a larger number of qualified applicants than they can possibly accept, admission is competitive and is offered only to those students judged to be best prepared and whose backgrounds and interests are well suited to the programme.

Admission to the doctoral degree programme is based on a variety of criteria established by the graduate division and by the graduate faculty of the department or organizational unit of the university in which the programme resides. Normally, the graduate division requires that an applicant hold a baccalaureate degree from an accredited institution in which the basic requirements are equivalent to those of the admitting institution, including adequate preparation in the chosen field(s) of study. The master's degree can also be a way to prepare for the doctor's degree, particularly if one wishes to make a change from the subject which was initially studied at the post-secondary level.

Criteria for admission to doctoral programmes used by departmental faculty committees and the graduate dean typically include undergraduate and graduate grades, scores on tests, a statement of purpose by the student, a sample of the student's work, recommendations and personal statements by current or former professors, interviews, work records and references, and sometimes completion of the master's degree or its equivalent. Some institutions and departments administer an inventory or placement examination to students when they are first admitted to doctoral programmes to determine the extent to which previous educational experiences have prepared them for advanced study.

For the professional degree, work experience is often as important as academic prerequisites. In the science and engineering fields, the prerequisites may be very specific.

In order to help determine the admissibility of the applicant, most graduate schools require satisfactory performance on one or more standardized tests. These help admissions officers to compare the individual applicant with the norm as well as with current and past applicants to the programme. One widely used test is the Graduate Record Examination (GRE). GRE scores should never be taken as the sole criterion for admission; rather, they should be used in conjunction with other measures, such as those mentioned above. As an aid in determining adequate competence, universities often require satisfactory scores on standardized verbal or quantitative tests or on tests developed within the institution. In general, students whose native language is not English or who have not attended an undergraduate institution in which English was the medium of

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instruction must in addition demonstrate mastery of English by submitting a satisfactory score on the Test of English as a Foreign Language (TOEFL), offered worldwide by the Educational Testing Service, or by other equivalent methods.

Most universities require at least one or two years of continuous on-campus residence.

The final decision as to admission to doctoral programmes is made upon the recommendation of admission committees composed of professors in specific programmes.

### **3.2. Organization of Doctoral Studies**

Doctoral studies can be full-time or part-time. The degree normally requires at least three years from award of the bachelor's degree or two years from award of the master's degree, but the actual time, calculated in full-time equivalents, is usually from five to seven years.

Graduate students are typically required to register for courses and/or research each quarter or semester in which they are working toward their doctorates, this in order to document the full commitment of the university, in terms of staff and resources, to the student.

Some institutions require full-time and continuous registration from the time a student is admitted until the degree requirements are completed, whether or not the student is on campus. In this case, students must register and pay tuition and other fees at the same rate for all credits earned during the course of acquiring the degree. Other institutions may require registration for a minimum number of years of full-time doctoral study (usually two years). Once that requirement has been met, reduced registration fees are generally permitted thereafter.

Each student has a specially appointed adviser holding the doctor's degree who is a member of the graduate faculty and is responsible for the coordination and the monitoring of doctoral study. Sometimes a committee of graduate faculty members is appointed for each doctoral student to provide this guidance. The adviser and/or committee meet with the student and assist in planning a programme of course work, seminars, and research; they monitor the progress made toward completion of the programme of study, arrange for the administration of examinations, and make recommendations about the student's continuation in the programme. The adviser and/or committee also determine when the student is ready to be recommended for the degree. The number of doctoral students a professor can successfully direct at any one time depends on the field of study, the individual faculty member's other responsibilities, and the quality of the students accepted into the programme.

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The frequency of meetings between a student and his or her adviser is subject to mutual agreement. A student can also receive assistance from other members of the department as well as from academics from other countries. Joint supervision and single award as well as joint supervision and single award with mention of co-operation on the certificate are usually used as the modes of interuniversity co-operation in the preparation and award of doctorates.

During the period of doctoral studies, a student can interrupt and resume studies, do part-time teaching and research, carry out part of his or her required research in other universities or research centres, and attend international workshops or short courses in the country and abroad as part of his or her training.

The award of the doctoral degree creates no entitlement to future employment—either in higher education and research or in industry.

### **3.3.Programme**

The programmes of doctoral studies comprise both graduate courses and research. The course programmes, consisting of lectures and seminars, are devoted to advanced courses in the field, auxiliary subjects, research methodology, and foreign languages. The total amount of time allocated to each course component varies according to field and department.

In many institutions, students are essentially on probation for the first two years of graduate study. They are admitted to candidacy for the doctoral degree by the end of the second year or the beginning of the third after a number of qualifying procedures have been satisfactorily completed. Admission to candidacy means that, in the judgment of the faculty, the doctoral student has an adequate knowledge of the field and speciality, knows how to use the academic resources, has potential to do original research autonomously, and presumably will complete the dissertation. The qualifying procedures may include one or more of the following: formal course work; proficiency examinations in languages and/or in other research tools; comprehensive (or general) written and oral examinations; one or more research papers showing evidence of the ability to do original work (examples include papers presentable at a professional conference, mini-grant proposals), and an accepted doctoral dissertation proposal. Research, advanced seminars, optional courses, and in some fields, further examinations, occupy the student's attention from this point until the dissertation has been written and the final oral examination, if required, has been passed.

In some cases, often dependent upon the field, an examination (its labels vary: preliminary, qualifying) may be required after the first year of graduate study or after half the course work has been completed, its purpose being to ensure that the student is making satisfactory progress.

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Although not all universities require preliminary examinations, virtually all universities require an examination for admission to candidacy after the student has completed appropriate courses and seminars. This examination also has different labels depending, for the most part, on the tradition of the institution (it is often called a general, comprehensive, or qualifying examination). Regardless of its title, its purpose is to determine the student's readiness to undertake independent research. This examination often consists of both a written and an oral part and is usually prepared, administered, and evaluated by a committee of faculty members appointed by the graduate division. Because of the importance of these examinations, most schools allow students a second attempt if they do not perform satisfactorily on the first. Usually the examination may be repeated only after a waiting period (a quarter, a semester, or a year), which allows the student time to take appropriate courses and otherwise prepare more adequately for the second examination. Students who fail this examination are not permitted to continue working toward a PhD in the given institution.

### **3.4. Dissertation**

The submission and defense of a substantial dissertation are the major requirements for the award of the doctoral degree.

The final choice of the dissertation topic involves the student, the adviser, the committee members, and sometimes other university committees. The method of identifying a dissertation project or topic varies markedly both among and within disciplines, but its final selection is by agreement between the candidate and the research adviser or advisory committee.

Once an area of research in which the dissertation is to be written is approved, a dissertation committee is appointed, usually by the graduate dean, which may or may not include the same committee members who formerly advised the student. Three to five professors - from the department, from other departments, and occasionally from another university - are usually asked to serve. The major professor directing the student's research chairs this committee. Such a committee provides a means of exposing the candidate's ideas to a variety of views early in the planning. This may help avoid the development of an ill-advised research project and embarrassment, or worse, at the time of the final oral examination.

The process of writing the PhD dissertation includes development of a hypothesis, analysis and interpretation of research results, and conclusions drawn therefrom. It fulfills two major purposes: i) it is an intensive, highly professional training experience, the successful completion of which demonstrates the candidate's ability to address a major intellectual problem and arrive at a successful conclusion independently and at a high level of professional competence, and ii) its results constitute an original contribution to knowledge in the field. Doctoral research may be done as part of a team, with individual

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students working together on the total project, but defining specific parts that can be defended as representing their own individual work.

Universities typically set forth, either in the graduate school catalogue or in a special publication, the specific requirements for preparing the dissertation document, including typing or copying requirements, methods of citation, and related matters. Requirements for format may be dictated in part by such external criteria as availability of the dissertation for microfilming.

Some institutions permit the offering of one or more published articles, the research for which has met the requirements of the department and the graduate division, as part or all of a dissertation. Alternatively, with the approval of the department and the graduate dean, the candidate may be permitted to submit the dissertation in the form of a manuscript (or manuscripts) for publication in a scholarly journal. In those instances in which the submission of published articles or of manuscripts is permitted, an additional requirement is that the candidate include introductory, transitional, and concluding sections in order to achieve a more coherent and rounded piece of work. Also, the candidate may be required to include appendices which will provide more detailed materials on history, methods, and results than would ordinarily be presented in published journal articles.

All institutions expect, and some explicitly state, that the dissertation should be written in literate and lucid form, thus demonstrating the candidate's ability to communicate clearly and effectively. Most institutions require that the dissertation be in English. Others may allow or require that the dissertation be in another language, sometimes depending on the field.

In most universities, a final oral examination is required. The nature and scope of this examinations the composition of the examining committee, and the rules of procedure may vary, subject to policies set by the graduate dean. but the examination typically concentrates on the defense of the dissertation and its relation to the specialized field in which it lies. In some fields in some universities the oral defense is waived if in other respects the committee members consider the dissertation to be satisfactory.

The nature of the defense varies according to field. In some, the defense may essentially test the student's skills in intellectual analysis and debate. It may therefore consist primarily of the presentation of the student's ideas on or interpretations of some topic, which are defended against criticisms concerning their reasonableness, superiority over earlier interpretations, etc. In other fields, however, the student may have to defend experimental design, data collection procedures, and the interpretation of the results. Frequently the student is expected to begin the proceedings with a general exposition of his or her research findings .

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There are varying practices with respect to the composition of university oral examining committees. A given committee may consist of the candidate's advisory team; it may be a committee named by the department head (typically with the approval of the graduate dean); or it may be appointed by the graduate dean (often with nominations from the department). The chairman of the examining committee may be the graduate dean, the department head, the dissertation adviser, or a member of the faculty from another department. In some cases only the committee members attend; in other cases, the examination is open to the public. A minimum number of committee members is usually specified (at least four or five) with the requirement that all be of assistant professor rank or higher and hold the PhD degree or the highest degree in their field of specialization (although the graduate dean may be empowered to make exceptions).

Some institutions require that all members of the examining committee be full-time members of the university's faculty. Some may permit, encourage, or even require the appointment of one or more appropriate members from outside the university, with the approval of the graduate dean. Sometimes such outside members are required to be additional members, beyond the stated minimum number of members. Typically, the final examination cannot be scheduled until the research adviser has read a draft of the dissertation and notifies the graduate dean that the dissertation is satisfactory and that the examination can be scheduled. A minimum waiting period is usually specified in order that members of the committee have sufficient time to read the dissertation.

The examining committee is charged with the task of determining, through the reading of the dissertation and by the conduct of the examination, whether i) the dissertation is satisfactory and ii) whether the candidate defended it successfully. With respect to the voting of the committee, almost all universities require more than a simple majority to pass the candidate. Some specify that a single negative vote fails the candidate; some, that two or more negative votes are required to fail the candidate. If the candidate does fail the examination, a substantial waiting period (often three to six months) may be required before a reexamination may be scheduled. Typically, not more than one reexamination is permitted.

A copy of the dissertation is deposited in the library of the awarding institution and in the national data bank. In most cases, a further copy of the dissertation is deposited with University Microfilms International (UMI) of Ann Arbor, Michigan, to serve as a master copy from which other copies of the dissertation can be made available, on order, in the form of Xerox or microfilm.

#### **4. OTHER ROUTES LEADING TO THE DOCTOR'S DEGREE**

There are no other routes leading to the doctor's degree.

## 5. THE SECOND DOCTOR'S DEGREE

In the United States, almost no institutions of higher learning offer the possibility of a second or advanced doctorate.

## 6. RECOGNITION

PhD recognition is evaluated individually by each higher education institution in the United States. The recognition procedures are undertaken either in Admissions and Records offices, by Graduate School Admissions offices, sometimes by the staff of Centers of International Education, or by individual departmental offices.

All degrees are evaluated by the individual institution. In the Admissions and Records Office, a foreign credential evaluator reviews any degrees or diplomas submitted by foreign students who have not already graduated from a recognized university. The evaluator determines:

- the level of study completed;
- the level of study requested;
- how much transfer credit, if any, to award.

The credentials of students who have already graduated from a recognized university are evaluated by a foreign credential evaluator in the Graduate School Admissions office. That office determines whether or not the student has a first degree comparable at least to the American bachelor's degree. If the degree is comparable, then depending on the student's objective, he or she will be admitted either to a master's programme, to a doctoral programme, or to an unclassified programme of study to prepare for either the master's degree or the doctorate.

If the person holds a postgraduate diploma or degree - like the PhD - the Graduate School would also evaluate the level of the degree. Usually these evaluations are done for people who are seeking a faculty appointment. All these determinations are made by Graduate School evaluators (who may be part of a centralized Admissions and Records office).

Sometimes the credentials of those seeking faculty appointments are evaluated by the individual departments; however, normally, to ensure some kind of standardization or professionalism, this task is undertaken by a credentials specialist (or evaluator), in a centralized office, or by a knowledgeable expert in a Center for international education.

Some universities do not have staff with this level of expertise. To assist them, there are private agencies in the United States that do nothing but evaluate foreign credentials. About ten of such agencies exist.

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There is no professional body or government ministry in the United States that does this work for academic credentials. With regard to professional credentials (for example, in law, in medicine, and in dentistry), there are professional associations, which are usually connected to licensing offices, that do it according to the rules of the profession. For example, in the State of New York there is an office of Credentials Assessment in the State Education Department that evaluates all foreign degrees in the health professions and determines which, if any, licensing requirements remain to be met.



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