Overview on the Greek Higher Education System at Doctoral Study level and at the Technical University of Crete

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2 Introduction

This document is prepared in the framework of the TEMPUS Project "RODOS – Reform of Doctoral Studies in Serbia (544093-TEMPUS-1-2013-1-RS - TEMPUS-SMGR-2013-5028/001-001)" to be included in the final report of the project.

The objective is to present the Greek (legal) framework for doctoral studies and doctoral schools in general, and the organization of doctoral studies and doctoral schools at Technical University of Crete in particular.

3 Greek (legal) framework for doctoral studies and doctoral schools

3.1 Structure of doctoral studies

The responsibility for planning and organizing third cycle study programmes is in the competence of the University (Law 4009/ 2011, article 39, Official Government Gazette, 195 Aʹ/06-09-2011).

The deanery of the school for postgraduate studies based upon its proposal or the proposal of the deaneries of the relevant graduate schools, organizes the study programme for doctorate studies. This contains the titles of the compulsory, compulsory by choice and optional lessons, their content and number of teaching hours per week (including the didactic work of any form) as well as the time sequence and the interdependence of the lessons. It also contains the qualifications and specializations required of the teaching staff in order to achieve the learning goals set.

The doctoral programmes, in accordance with Law 4009/2011, are prepared by a special committee, consisting of professors of the relevant scientific field, including the deanery or, in case of cooperation of faculties of the same university, the deaneries of the respective faculties. The content of the curriculum is approved by the rector, upon recommendation of the deanery of the faculty and consent of the Senate. The internal regulation contains specific provisions for the regulation of issues related to the establishment of the committee, and the conditions and procedure for the annual review of individual aspects of the content of the curriculum.

The criteria, the prerequisites and the process for the choice of doctoral candidates are defined by the Institution's Organisation. The Internal Regulation, defines the conditions and the process for exempting, in part or in whole, doctoral candidates from the obligation of attending the doctorate study programme. The postgraduate degree, publications, research, the knowledge of foreign languages etc are factors taken into consideration for the choice of doctoral candidates.

3.2 Process of admission to a PhD program

According to Law 3685/2008 (article 9, Official Government Gazette, 148 Aʹ/16-07-2008), candidates interested in conducting a doctoral thesis, have to submit an application to the Secretary of the respective Department, identifying the general scientific field and subject area.

Then, it is considered whether the applicant meets the requirements for conducting a doctoral thesis, based on criteria established in accordance with the Rules of Postgraduate Studies. Generally, postgraduate degree holders have the right to apply for a doctoral thesis.

In exceptional cases, other applicants, not Masters Degree holders, may be accepted as PhD students (afterwards a reasoned report of the Department's Special General Assembly). Graduates of Technological Educational Institutions (TEI) and School of PEdagogical and Technological Education (ASPETE), or graduates of equivalent schools, may be admitted as doctoral students only if they are holders of Postgraduate Degrees.

By decision of the postgraduate studies school deanery, a supervisor is appointed for each doctoral candidate, coming from the same or relevant scientific field as that of the candidate's interests. Through the same process more than one supervisor may be appointed. He can be a professor from the same or another University or researchers, with equivalent rank, from a research centre, from the country or even abroad.

3.3 Evaluation of the doctoral thesis

According to Law 4009/2011 the doctorate thesis is publicly supported by the candidate, provided a written proposal by the supervisor/s (professor/s or/and researcher/s) is submitted to the postgraduate studies school deanery. If no proposal is submitted or if the proposal is of a negative nature, this process may continue based upon an application of the candidate himself. A three member committee is responsible for the evaluation of the thesis. This committee is set up by decision of the deanery, which is based on a proposal submitted by the supervisor/s.

According to Law 3685/2008, for each doctoral candidate, a three-member advisory committee is appointed by the Department's Special General Assembly. The three-member advisory committee, in collaboration with the doctoral candidate, submits a progress report to the Department's Special General Assembly at the end of each year. The supervisor/s may not be appointed as members of the committee. One of the members is assigned by the deanery to draft a report evaluating the thesis. A positive evaluation is a prerequisite for awarding the doctorate degree. The University regulates other matters regarding to the thesis, as the process of public support or possible additional requirements, such as publications.

This committee, whose main duty is to provide mentoring and guidance to doctoral candidates, is composed of a faculty member of the Department concerned (with the rank of professor, associate professor or assistant professor), as supervisor, as well as two (2) members, who may be faculty members of the same or another Department of the same or another University within the country or abroad, retired due to age professors (of University, higher military education institutes or members of scientific staff of Technological Educational Institute/ TEI and School of PEdagogical and Technological Education/ ASPETE) or researchers (of A, B or C ranking) of a research center recognized within the country or abroad, holding a doctorate degree. Committee members should have the same or related academic field of specialisation with that of the candidate's dissertation. It should be noticed that each Scientific Teaching Staff can supervise maximum 5 doctoral candidates.

For the final assessment and judgment of the candidate's doctoral thesis, the Department's Special General Assembly designates a seven-member evaluation committee, including members of the above mentioned three-member Advisory Committee.

The doctoral candidate presents his thesis in public to the seven-member selection committee, which then considers its originality and contribution to science. For the thesis approval, the assent of at least five (5) members of the evaluation committee is required. The Department's Special General Assembly decide the language of writing the thesis.

3.4 Minimum duration of doctoral studies, obligations and capabilities

Doctorate diploma cannot be received in less than three full calendar years from the date of appointment of the three-member Advisory Committee (with exception in the doctoral candidates who are not master holders, where they need at least four years).

The doctoral candidate is obliged, if this is requested, to provide educational services to the Department, in which the dissertation is prepared, in accordance with the Regulations of Institution's Posgraduate Studies.

Doctoral students may offer assistance to the members of the Faculty at undergraduate and postgraduate level with hourly charged to the budget of the Foundation. This can be done with proposal of the Department's Special General Assembly and common decision of National Education and Religious Affairs and of Economy and Finance ministers.

Moreover, Greek Universities are free to organize and offer joint programmes of study, in cooperation with institutions from abroad, leading to the award of respective degrees. A collaboration protocol between partner universities is established, which, inter alia, defines bodies entitled to monitor the said programmes.

3.5 Studies and Schools at Technical University of Crete at a glance

3.6 Historic overview

The Technical University of Crete was founded in 1977 and admitted its first students in 1984. The Institution provides undergraduate and graduate studies in modern engineering fields. TUC is a small, young, dynamic University with a clear mission: to expand knowledge and benefit society through research integrated with education. In this endeavour, the pursuit of excellence is the driving force. More than 50 laboratories with prime equipment, high technology infrastructure and eminently qualified personnel, as well as 120 faculty and staff members with international academic background attest to the level of excellence in education and research conducted at the University. This profile ranks the Technical University of Crete amongst the most prominent research institutions in Greece.

3.7 Academic Schools

The Technical University of Crete comprises five Engineering Schools, all of which offer undergraduate and postgraduate study programmes. The Schools are as follows by year of establishment:

- School of Production Engineering and Management (PEM): http://www.pem.tuc.gr/

The School places emphasis on modern technologies, production systems, management and decision-making, finance, operational research as well as ergonomic design, control systems, materials, mechatronics and robotics. The curriculum provides a solid foundation in

mathematics, physics, mechanics and informatics. It also provides a comprehensive engineering education while allowing students to focus on specific areas in Production Engineering and Management.

- School of Mineral Resources Engineering (MRED): http://www.mred.tuc.gr/

  The primary goal of the School is to educate engineering students on a broad range of scientific and technical issues related to the extraction and processing of minerals. The coursework focuses, in particular, on industrial minerals and energy resources. The changing demand for minerals has influenced the development and application of modern methods for exploration and exploitation. Dynamic changes in market conditions and the technology currently available have generated the need to train engineering students to be able to successfully face new challenges. Hence, the courses offered in the School aim to deliver a balanced mixture of fundamental skills and knowledge in specialized fields to ensure that graduates have the expertise and flexibility required for success in a competitive global market.

- School of Electrical and Computer Engineering (ECE): http://www.ece.tuc.gr/

  The curriculum of the ECE School aims at a high quality theoretical education and hands-on training of engineers in modern technology subjects such as electronics, control systems, computer science, energy and telecommunications. The goal is for students to develop the theoretical background that will allow them to understand the fundamentals of the above technologies in depth so that they will be able to effectively cope with the demands of these rapidly changing fields.

- School of Environmental Engineering (ENVENG): http://www.enveng.tuc.gr/

  The objectives of the Environmental Engineering School are to provide advanced education of a high standard in environmental science and engineering and to prepare qualified engineers capable of contributing to the measurement, monitoring, assessment, and treatment of problems caused by human intervention in the environment. The mission of the School is to offer courses at undergraduate and graduate levels, advance multi-disciplinary research on environmental issues, and provide environmental services to society and to the scientific community.

- School of Architecture (ARCH): http://www.arch.tuc.gr/

  The School aims to educate and highly train students across a wide spectrum of knowledge covering subjects in art, technology and science, and connecting theory and design. Its mission is the cultivation and promotion of knowledge through teaching and research in the scientific fields of architecture, urban design and planning, architectural technology, preservation and monument restoration, as well as the environmental-ecological dimension of architectural design. The curriculum covers the above subject areas with courses in Architectural Design, Urban design and Planning, Digital Technologies in Architectural Design, History and Theory of Architecture and Art, Landscape Architecture, History of City and Urban Design, Architectural Technology, Visual Arts, Restoration of Buildings. It is also supplemented with courses in natural and social sciences.

4 Postgraduates studies at a glance

All the five Schools at the Technical University of Crete offer postgraduate programmes. Courses are usually taught in Greek and subject to the discretion of the professor, they may be taught in English.

M.Sc.

The duration of postgraduate studies at the Master's level is two semesters (minimum). Students applying for admission to these programmes should normally have an overall grade point average of 7,5 as well as very good knowledge of English. Students are expected to maintain this average throughout their postgraduate studies. Each School selects its postgraduate students among applicants from Greece and abroad. Successful postgraduate students or research assistants may receive scholarships.

Ph.D.

Doctoral degrees are awarded by each School upon the completion of a Ph.D. dissertation and a successful open defence.

4.1 Postgraduate Programmes

The Technical University of Crete is committed to staying at the forefront of educational and intellectual development in the areas of research and teaching both in Greece and internationally. This commitment is reflected in the wide range of M.Sc. & Ph.D. programmes run by five Schools of the Institution and the growing number of graduate student population.

The number of graduate students admitted is determined by the General Assembly of each School. Foreign students interested in applying for a M.Sc. or a Ph.D. should contact the School's Secretariat.

For more information on the Master programmes offered by TUC, please visit the websites of the Schools.

5 Funding of doctoral studies

5.1 Greek funding of doctoral students and third party founded research

PhD students can obtain an amount of money either over third party funded research projects or they can apply for an individual fellowship from the National Scholarship Foundation[1], bequests[2], academies[3] or other foundations[4]. The amount of the grant is determined by each proclamation. The selection criteria may be related to academic performance, social criteria or a combination of them. Generally, there is age limit and the duration is from one to three years. Extension may be possible.

[1] https://www.iky.gr/en/scholarships/doctoral-engl

[2] See for example: http://www.minedu.gov.gr/index.php?option=com_content&view=article&id=1038:klirodotimata-amesis-diaxeirisis-ypoyrgeioy-oikonomikon-kai-ypdbmth&catid=53:ypotrofies-klirodothmata&Itemid=141&lang=el

[3] See for example: http://www.academyofathens.gr/en

[4] See for example: http://www.minfin.gr/web/g.g.-demosias-periousias/prokeryxeis-ypotrophion-kai-apophaseis-diorismou-ypotrophon

Furthermore, in Greek nationality students who are enrolled in Greek M.Sc. or Ph.D. programs there is the opportunity to loans granted by credit organizations and institutions, guaranteed by the Greek Government or with interest rate subsidized by the Greek Government (Law 2413, paragraph 8, article 43 Official Government Gazette 124 A΄/17-06-1996).

5.2 EU funding

European Union offers funding opportunities to doctoral candidates at any nationality and at any research area. For example, Marie Sklodowska – Curie Actions (MSCA) offer paid positions for doctoral candidates within MSCA projects in any discipline, in universities, research centres and companies involved in the MSCA projects[5]. One pf the types of MSCA is the Research networks (ITN) which support Innovative Training Networks, providing experience outside academia, developing innovation and employability[6].

6 Conclusions

The doctoral diploma is a very important investment for someone and consist accumulation of wealth for a country, adding value to both of them. Greece has already turned in this direction, focusing on both the quality of the doctoral studies and the wide range of scientific fields.

[5] https://ec.europa.eu/programmes/horizon2020/en/area/funding-researchers
[66] https://ec.europa.eu/programmes/horizon2020/en/h2020-section/marie-sklodowska-curie-actions