

The External Evaluation Report of a Doctoral Study Domain

Contents

- I. Introduction
- II. Methods used
- III. Analysis of performance indicators
- IV. SWOT Analysis
- V. Overview of judgments awarded and of the recommendations
- VI. Conclusions and general recommendations
- VII. Annexes

I. Introduction¹

The present report was created on the basis of the periodic evaluation of the Doctoral field " Civil Engineering and Building Services " which are established at the Technical University of Timisoara. The evaluation period was carried out during the period 27th September to 1st October.

The Civil Engineering and Building Services Domain Panel consisted of the following three members,

Professor L Batali co-ordinator, Technical University of Bucharest.

Professor L F Boswell City, University of London, International Expert..

Constantin Munteanu, PhD Candidate and student member.

The internal self evaluation report of the doctoral university field was made available to the evaluating team before the evaluation visit and could be consulted and analysed. The report was prepared in accordance with the recommendations of the Guidelines developed by ARACIS. The report was accompanied by annexes which contained all the necessary information for the Civil Engineering and Building Services doctoral field.

Specific activities scheduled between 28th September and 1st October included online meetings with members of the evaluation commission and meetings with the evaluating commission and university representatives, faculty, doctoral, management, coordinators, students, graduates and employers, etc.

A visit to the Civil Engineering and Building Services facilities and laboratories was undertaken by Professor Batali on Thursday 30th September to establish their quality and suitability.

II. Methods used

This chapter will contain the methods and tools used in the external evaluation process, before and during the evaluation visit, including at least:

- The analysis of the internal evaluation report of the doctoral study domain under review and its Annexes;
- The analysis of documents made available by the IOSUD, in physical format, during the evaluation visit (if such documents have been requested);
- The analysis of documents, data and information available on the IOSUD/Doctoral School(s) website, in electronic format;

¹ Each time when applicable the information shall be presented gender-wise.



- Visiting the buildings included in the institution's property, comprising (indicative and non-exhaustive list, which shall be changed according to the context):
 - classrooms;
 - laboratories;
 - the institution's library;
 - research centers;
 - the Career Counselling and Guidance Center;
 - lecture halls for students;
 - the student residences;
 - the student cafeteria;
 - sports ground etc.;
- Meeting/discussions with doctoral students in the doctoral study domain under review;
- Meeting/Discussions with the graduates of the doctoral study domain under review;
- Meeting/Discussions with employers of the graduates in the doctoral study domain under review;
- Meeting/Discussions with the school officials of the Doctoral School(s) in which the doctoral study domain under review is operating;
 - Meeting/Discussions with the doctoral advisors in the doctoral study domain under review;
 - Meeting/discussions with the representatives of the various structures of the IOSUD/Doctoral School(s) in which the doctoral study domain under review is operating:
 - The Council of the Doctoral School, the University Senate, the Board of Directors, the Quality Assessment and Assurance Commission, the Quality Assurance Department, the Ethics Commission (including with the student representatives of these structures);
 - the Career Counselling and Guidance Center;
 - student organizations;
 - secretariats;
 - various departments/administrative offices (Social/Student residences-Cafeterias etc.);
- Application of questionnaires to doctoral students or academic staff in the doctoral study domain under review.

Herewith a summary of the online zoom meetings. Generally, live English translation was provided, however, when this facility was unavailable, an English transcript was provided.

Monday 27th September 9.00 am Romanian time.

Preliminary meeting with all evaluation team members.

Professor Seghedin took the chair and asked for first impressions regarding the self assessment documents. Professor Moldarun (expert coordinator) appreciated the compilation of the IOSUD report. The data was presented in tables and included justification and arguments for all performance indicators. Annexes have been provided. Professor Wertz agreed that parts 1 and 2 were very good, but that the third part containing the annexes was in Romanian. There was a suggestion that the annexes be limited with more information contained in the main body of the text. I would agree with this point for the Civil Engineering and Building Services domain.

The student representative stated that the student questionnaire, with 15 questions, was welcomed by the students.



Professor Chiciuc suggested that virtual tours of laboratories and other relevant facilities be undertaken due to covid restriction. Such a tour was undertaken by Professor Batali on behalf of the Civil Engineering and Building Services domain.

Tuesday 28th September 10.00 am Romanian time.

Meeting with the team who drafted the self assessment documentation for the Civil Engineering and Building Services domain.

Professor Florea Dinu took the chair to answer questions.

The Professor explained that every doctoral domain in UPT has a single co ordinator. Even though there are domains having a large number of co ordinators, the relationship works well between domain and doctoral co ordinators. Each domain can have a member who sits on the Doctoral School Council. However, legislation requires only 3 members on the School Council from 11 domains. There are regular meetings between the Council and co ordinators to achieve effective management.

Professor Dinu also explained that he had written the self assessment report with the assistance of academic colleague, secretaries and the accountancy office.

The self assessment report mentioned the keeping of records which means that a doctoral student has a maximum of 4 years for completion.

University scholarships are available for financial support (approx 400 euro/m) and there is a provision of 1000 euros for conferences and overheads etc, which the school council provides. About 4 to 5 students pay tax each year.

There are strict criteria governing the progression of students into the following year. Completing a research report, completion of papers, positive participation in a research team. Some students may produce a paper after they have completed the first year and this may be possible if the research work is a continuation of a master's project. There is a positive feedback evaluation of doctoral co ordinators and reseach students.

Tuesday 28th September 11.00 Romanian time.

Meeting with the Doctoral Co ordinators of the Civil Engineering Domain of UPT. Attendees, Professor Dan Daniel Vice Rector, Professors, Popescu, Dubina, Zahara.

During the meeting there was a good dialogue concerning PhD supervision, progress and facilities. The relationship between PhD students, the supervising committee and associated problems was discussed. There are twice monthly meetings with PhD students and a yearly meeting with the supervision committee. Students are encouraged to write papers in the first year and in latter years, after progression, they are expected to consolidate their research progress. A suggestion was made to hold a distinct course for paper writing in the first year rather than its inclusion in the second semester Ethics course. This was considered a good idea, but for the time being doctoral supervisors undertook paper writing supervision.

The difficulties of continuing research during the pandemic were considered and solutions proposed. The UTP software is open source and, therefore, readily available. Also, doctoral supervisors hold some licences for a limited time and these are made available. At institution level, the university won projects to finance students to attend conferences at to write papers (2400 euro/student). Fees can be paid to students who publish in WofS journals. Other facilities used during the pandemic were, virtual platforms, zoom, webinars email and phones.



The difficulties of retaining and appointing technical staff for research labs was discussed. Salaries are low and career opportunities limited. Some support from local industry has been possible at UTP but this has been low.

Projects which are linked with industry problems are popular since they may involve extra research funding. These also prove to be popular topics for PhD work. There is an admissions criteria to select PhD candidates who are given a template to assist in decision making. It seems there is a dialogue between potential candidates and doctoral co ordinators, In order for a doctoral stage extension for more than 3 years, there is a requirement for the publication of 2 papers in ISI journals and 3 research reports. Only in exceptional circumstances is the requirement relaxed.

Tuesday 28th September 12.00 hrs Romanian time.

Meeting with PhD students from the Civil Engineering Domain of UPT.

Several topics were discussed at this meeting which was chaired by Professor Batali.

It was agreed that there was a general satisfaction with the extent and quality of supervision. Regular meetings with co ordinators are held. The normal period of study was 3 years, but an extension was possible if certain performance criteria had been met by the student. Links with industry are encouraged for some projects for which there may be an application of the research results and the possibility of employment. Continuing professional development is important during and after completion of the PhD degree to add skills and knowledge to engineering design, for example. Opportunities to develop ethical attitudes occur in the ethics class as well as academic writing and the preparation of papers for conferences and journals. Participation in local seminars and external interaction is encouraged. Laboratory facilities are considered to be adequate and the general research environment is conducive for the production of high quality work.

Tuesday 28th September 4.00 pm Romanian time.

Meeting with the members of the Ethics Commission.

The Ethics Commission consisted of 11 members who considered the academic aspects of ethics. The subject is presented as a course in the second semester for PhD students. A procedure is in place to consider complaints from university members, plagiarism, academic theft, intellectual property rights, and academic theft.

Since Civil Engineering and Building Services students might become involved with environmental issues, the social consideration of the role of the engineer in society is important. The idea, that a culture of ethical awareness has been developed with respect to the environment, is important.

Tuesday 28th September 5.00 pm Romanian time.

Meeting with members of the Commission for Quality and Assurance.

The structure of the Commission involves the Rector who chairs the meetings which are held with lawyers and students. Some details regarding the process's of QA and internal evaluation were given.

The Civil Engineering and Building Services domain is responsible to the Doctoral School for self regulation. There appear to be no specific procedures for QA evaluation with a general approach being undertaken and the process seems to be straight forward.

The issue of "quality of staff" was discussed and several international criteria are applied for staff evaluation. It is important for doctoral supervisors to be qualified in this capacity.



Wednesday 29th September 9.30 am Romanian time.

Technical meeting with Evaluation team.

The meeting was delayed, therefore, the content was less than might be expected. Some general comments from the chair were made at the start. It is important that the performance indicators be understood (which they seem to be) and many positive aspects were found in the report. A clarification of student and authorised supervisor numbers was requested. Also, the annexes were considered to be complex.

Some general comments were put forward after the chair had finished the introduction. There were no particular issues and apart from the clarification mentioned above, the report was excepted with no further comments. The self evaluation process has been very valuable.

Wednesday 29th September 10.00 am Romanian time.

Meeting with Civil Engineering domain graduates.

In attendance for this meeting were 5 graduates from UPT. The chair posed the the following question to start the meeting. How was the PhD experience; Were the guidance and facilities satisfactory; Where are you working ? Herewith the brief responses from the 5 graduates.

Graduated in 2018 and obtained an Msc before a PhD. The subject was indusry based with 3 months spent in Japan. Overall a very worthwhile experience leading to employment in industry.

Graduated in 2018, studied the subject "Energy efficient Buildings", undertook an internship during research and participated in conferences. Facilities and supervision were excellent.

Graduated in 2016, the thesis subject involved construction monitoring. Now works in London for a Civil Engineering construction company. The PhD experience has been very valuable.

Graduated 2020, studied " the holistic assessment of historic structure", spent a period in Belgium as an Erasmus student and attended conferences during PhD research.

Graduated 2017, studied in the area of steel structures, but started the topic whilst a masters student. UTP has provided a good experience which has been very worthwhile.

In summary, all students reported a very positive response.

Wednesday 29th September 11.00 Romanian time.

Meeting with Civil Engineering Domain employers.

The objective of the meeting was to determine how industry is co operating with UTP. Three persons from industry have ongoing involvement with the Civil Engineering and Building Services domain and report positive involvement.

A local company is supporting 10 projects, some involving structural strengthening. The company is in constant communication and supports projects at all levels (PhD, Msc and undergraduate).

A geotechnical company employing 12 persons is involved in linking with UTP regarding laboratory and experimental activities.

A design and building services company also expressed an ongoing involvement with UTP and offers joint PhD opportunities for students.

There is no doubt that UTP has a policy of collaborating with local companies to enrich the research experience of students in the Civil Engineering Domain.

Thursday 30th September 4.00 pm Romanian time.

Meeting with the Directors of Research Centres and Laboratories.



There are 26 centres and laboratories in UTP and the meeting was scheduled for 45 minutes. Thus, it is possible to provide only outline statements which were made during the meeting. Nevertheless, these provide a useful guide to understanding the situation.

There is a research plan and road map, with groups of critical mass having links with industry. The Vice Rector coordinates the centres. The provision of well founded laboratories is very important with the associated financial support. Some centres have been in existence for 30 years and have received grants to the value of hundreds of thousands of euros. In particular, the more recently established Bio medical centre has received a grant of 14 million euros and founded another centre. Two laboratories have been accredited and one of these is for Air Quality. Research Centres collaborate when there is an overlap of interests, ie, Welding Science or Integrated Engineering as two examples. Some centres act independently

The Bologna agreement has been the main standard since 2000 which recommends the relationship between research coordinators and PhD students. There is a delicate balance between centres, departments and faculties.

Some teaching staff are involved in centre research with the teachers selecting the topics.

A diagram would be helpful to understand the relationship between centres, domains, departments and schools all of which were mentioned during the meeting. Also, the number of staff of all definition and students and their distribution.

Friday 1st October 11.00 am Romanian time.

Meeting for conclusions with the Evaluation team.

Members of the evaluation team presented some conclusions concerning the main aspects considered in the evaluation visit. These included the evaluated doctoral study programs, the quality of staff and facilities which were provided. A series of recommendations were to be made in an action plan.

Friday 1st October 12.00 hrs Romanian time.

Meeting for Conclusions with University's representatives.

Some general comments were made at the start of the meeting and were followed by some specific comments related to various areas including the Civil Engineering and Building Services domain.

All documentation has been analysed and there was complete co operation with the evaluation team. There are many contracts and research grants. Laboratories are well founded and up to date with major international companies involved. It was encouraging to note the presence of new PhD "blood". The University has made extraordinary efforts to promote research and this gave a positive impression.

Some departments were mentioned as specifically good and these were, in no particular order, mechanical engineering, chemical engineering, industrial engineering, materials engineering, electrical engineering and computer engineering.

Civil Engineering was also mentioned as good. The research infrastructure was well organised with strong links with industry which was regarded as good and essential for applicable research. There was good management at all levels and financial support for research students.



III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

**general description of domain analysis.*

Criterion A.1. The administrative, managerial institutional structures and the financial resources

**general description of the criterion analysis.*

Standard A.1.1. The institution organizing doctoral studies (IOSUD) has implemented the effective functioning mechanisms provided for in the specific legislation on the organization of doctoral studies.

**general description of the standard analysis.*

Performance Indicator A.1.1.1. The existence of specific regulations and their application at the level of the Doctoral School of the respective university doctoral study domain:

(a) the internal regulations of the Doctoral School;

(b) the Methodology for conducting elections for the position of director of the Council of doctoral school (CSD), as well as elections by the students of their representative in CSD and the evidence of their conduct;

(c) the Methodologies for organizing and conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies);

(d) the existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad;

(e) functional management structures (Council of the doctoral school), giving as well proof of the regularity of meetings;

(f) the contract for doctoral studies;

(g) internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs based on advanced academic studies.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Encourage the developments of patents with industry to link with applicable research objectives.

Performance Indicator A.1.1.2. The doctoral school' Regulation includes mandatory criteria, procedures and standards binding on the aspects specified in Article 17, paragraph (5) of the Government Decision No. 681/2011 on the approval of the Code of Doctoral Studies with subsequent amendments and additions.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself



- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. None

Standard A.1.2. The IOSUD has the logistical resources necessary to carry out the doctoral studies' mission.

**general description of the standard analysis.*

Performance Indicator A.1.2.1. *The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Ensure english language provision in the system.

Performance Indicator A.1.2.2. *The existence and use of an appropriate software program and evidence of its use to verify the percentage of similarity in all doctoral theses.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Ensure english language provision in the system.

Standard A.1.3. The IOSUD makes sure that financial resources are used optimally, and the revenues obtained from doctoral studies are supplemented through additional funding besides governmental funding.

**general description of the standard analysis.*

Performance Indicator A.1.3.1. *Existence of at least one research or institutional / human resources development grant under implementation at the time of submission of the internal evaluation file, per doctoral study domain under evaluation, or existence of at least 2 research or institutional development / human resources grant for the doctoral study domain, obtained by doctoral thesis advisors operating in the evaluated domain within the past 5 years. The grants address relevant themes for the respective domain and, as a rule, are engaging doctoral students.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:



The indicator is fulfilled.

COMMENT. Encourage institution funding and hence increase the funds available for all domains including Civil Engineering.

Performance Indicator *A.1.3.2. The percentage of doctoral students active at the time of the evaluation, who for at least six months receive additional funding sources besides government funding, through scholarships awarded by individual persons or by legal entities, or who are financially supported through research or institutional / human resources development grants is not less than 20%.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. The Civil Engineering domain is able to attract additional funding from many sources and this is to be encouraged.

Performance Indicator *A.1.3.3.² At least 10% of the total amount of doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system is used to reimburse professional training expenses of doctoral students (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Continue to attract external funding.

Criterion A.2. Research infrastructure

**general description of the criterion analysis.*

Standard A.2.1. The IOSUD has a modern research infrastructure to support the conduct of doctoral studies' specific activities.

**general description of the standard analysis.*

Performance Indicator A.2.1.1. The venues and the material equipment available to the doctoral school enable the research activities in the evaluated domain to be carried out, in line with the assumed mission and objectives (computers, specific software, equipment, laboratory equipment, library, access to

² The indicators marked with an asterisk (*) hold a special status, referring exclusively to the evaluation of doctoral studies domains, as per Article 12 from the annex No.1 of the Order of the minister of education No. 3651/12.04.2021 approving the Methodology for evaluating university doctoral studies and the system of criteria, standards and performance indicators used in the evaluation. In case they are not met, the Agency extends a period of maximum 3 years to IOSUD to correct the respective deficiencies.



international databases etc.). The research infrastructure and the provision of research services are presented to the public through a specific platform. The research infrastructure described above, which was purchased and developed within the past 5 years will be presented distinctly.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Increase funding at institutional level and continue to attract other funding. Share resources to reduce costs.

Criterion A.3. Quality of Human Resources

**general description of the criterion analysis.*

Standard A.3.1. At the level of each domain there are sufficient qualified staff to ensure the conduct of doctoral study program.

**general description of the standard analysis.*

Performance Indicator A.3.1.1. Minimum three doctoral thesis advisors within that doctoral domain, and at least 50% of them (but no less than three) meet the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates (CNATDCU) in force at the time when the evaluation is carried out, which standards are required and mandatory for obtaining the enabling certification.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. No specific recommendation.

Performance Indicator *A.3.1.2. At least 50% of all doctoral advisors have a full-time employment contract for an indefinite period with the IOSUD.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Increase the number of advisors beyond 60%.

Performance Indicator A.3.1.3. The study subjects in the education program based on advanced higher education studies pertaining to the doctoral domain are taught by teaching staff or researchers who are doctoral thesis advisors / certified doctoral thesis advisors, professors / CS I or lecturer / CS II, with proved



expertise in the field of the study subjects they teach, or other specialists in the field who meet the standards established by the institution in relation with the aforementioned teaching and research functions, as provided by the law.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Increase the involvement of external specialists and academic visitors.

Performance Indicator *A.3.1.4. *The percentage of doctoral thesis advisors who concomitantly coordinate more than 8 doctoral students, but no more than 12, who are themselves studying in doctoral programs³ does not exceed 20%.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. No comment.

Standard A.3.2. *The Doctoral advisors within the domain are carrying out a scientific activity visible at international level.*

**general description of the standard analysis.*

Performance Indicator A.3.2.1. *At least 50% of the doctoral thesis advisors in the evaluated domain have at least 5 Web of Science- or ERIH-indexed publications in magazines of impact, or other achievements of relevant significance for that domain, including international-level contributions that indicate progress in scientific research - development - innovation for the evaluated domain. The aforementioned doctoral thesis advisors enjoy international awareness within the past five years, consisting of: membership on scientific boards of international publications and conferences; membership on boards of international professional associations; guests in conferences or expert groups working abroad, or membership on doctoral defense commissions at universities abroad or co-leading with universities abroad. For Arts and Sports and Physical Education Sciences, doctoral thesis advisors shall prove their international visibility within the past five years by their membership on the boards of professional associations, membership in organizing committees of arts events and international competitions, membership on juries or umpire teams in artistic events or international competitions.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

³ 3 years for the doctoral university studies with the duration stipulated at Article 159, paragraph (3), respectively 4 years for the doctoral university studies with the duration stipulated at Article 174, paragraph (3) of the Law of national education No.1/2011 with subsequent amendments and additions, with additional extension periods approved as per Article 39, paragraph (3) of the Code of doctoral studies approved by the GD No. 681/2011 with subsequent amendments and additions.



- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. No comment.

Performance Indicator *A.3.2.2. At least 50% of the doctoral thesis advisors in a specific doctoral study domain continue to be active in their scientific field, and acquire at least 25% of the score requested by the minimal CNATDCU standards in force at the time of the evaluation, which are required and mandatory for acquiring their enabling certificate, based on their scientific results within the past five years.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Increase training in research methodology and increase external funding.

Domain B. EDUCATIONAL EFFECTIVENESS

**general description of domain analysis.*

Criterion B.1. The number, quality and diversity of candidates enrolled for the admission contest

**general description of the criterion analysis.*

Standard B.1.1. The institution organizing doctoral studies has the capacity to attract candidates from outside the higher education institution or a number of candidates exceeding the number of seats available.

**general description of the standard analysis.*

Performance Indicator *B.1.1.1. The ratio between the number of graduates of masters' programs of other higher education institutions, national or foreign, who have enrolled for the doctoral admission contest within the past five years and the number of seats funded by the state budget, put out through contest within the doctoral domain is at least 0.2 or the ratio between the number of candidates within the past five years and the number of seats funded by the state budget put out through contest within the doctoral studies domain is at least 1,2.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. No comment.



Standard B.1.2 Candidates admitted to doctoral studies demonstrate academic, research and professional performance.

**general description of the standard analysis.*

Performance Indicator *B.1.2.1. *Admission to doctoral study programs is based on selection criteria including: previous academic, research and professional performance, their interest for scientific or arts/sports research, publications in the domain and a proposal for a research subject. Interviewing the candidate is compulsory, as part of the admission procedure.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Continue the encouragement of industrial involvement.

Performance Indicator B.1.2.2. *The expelling rate, including renouncement / dropping out of doctoral students 3, respectively 4, years after admission⁴ does not exceed 30%.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Continue supporting and encouraging students.

Criterion B.2. The content of doctoral programs

**general description of the criterion analysis.*

Standard B.2.1. The training program based on advanced university studies is appropriate to improve doctoral students' research skills and to strengthen ethical behavior in science.

**general description of the standard analysis.*

Performance Indicator B.2.1.1. *The training program based on advanced academic studies includes at least 3 disciplines relevant to the scientific research training of doctoral students; at least one of these disciplines is intended to study in-depth the research methodology and/or the statistical data processing.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

⁴ 3 years for the doctoral university studies with the duration stipulated at Article 159, paragraph (3), respectively 4 years for the doctoral university studies with the duration stipulated at Article 174, paragraph (3) of the Law of national education No. 1/2011 with subsequent amendments and additions.



The indicator is fulfilled.

COMMENT. Introduce access to broader programs for personal development.

Performance Indicator B.2.1.2. *At least one discipline is dedicated to Ethics and Intellectual Property in scientific research or there are well-defined topics on these subjects within a discipline taught in the doctoral program.*

- *description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

- *analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

Recommendations:

The indicator is fulfilled.

COMMENT. Promote students understanding of their professional role in society.

Performance Indicator B.2.1.3. *The IOSUD has mechanisms to ensure that the academic training program based on advanced university studies addresses „the learning outcomes“, specifying the knowledge, skills, responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities⁵.*

- *description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

- *analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

Recommendations:

The indicator is fulfilled.

COMMENT. No comment.

Performance Indicator B.2.1.4. *All along the duration of the doctoral training, doctoral students in the domain receive counselling/guidance from functional guidance commissions, which is reflected in written guidance and feedback or regular meeting.*

- *description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

- *analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

Recommendations:

The indicator is fulfilled

COMMENT. Continue with research training and encourage students to collaborate amongst themselves.

Performance Indicator B.2.1.5. *For a doctoral study domain, the ratio between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance must not exceed 3:1.*

⁵ Or by what the graduate should know, understand and to be able to do, according to the provisions of the Methodology of 17 March 2017 regarding inscription and registration of higher education qualifications in the National Register of Qualifications in Higher Education (RNCIS) approved by the Order No.3475/2017 with subsequent amendments and additions.



- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. No comment.

Criterion B.3. The results of doctoral studies and procedures for their evaluation.

**general description of the criterion analysis.*

Standard B.3.1. Doctoral students capitalize on the research through presentations at scientific conferences, scientific publications, technological transfer, patents, products and service orders.

**general description of the standard analysis.*

Performance Indicator B.3.1.1. *For the evaluated domain, the evaluation commission will be provided with at least one paper or some other relevant contribution per doctoral student who has obtained a doctor's title within the past 5 years. From this list, the members of the evaluation commission shall randomly select 5 such papers / relevant contributions per doctoral study domain for review. At least 3 selected papers must contain significant original contributions in the respective domain.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Encourage industrial based PhD topics which may lead to patents and increase employability.

Performance Indicator *B.3.1.2. *The ratio between the number of presentations of doctoral students who completed their doctoral studies within the evaluated period (past 5 years), including posters, exhibitions made at prestigious international events (organized in the country or abroad) and the number of doctoral students who have completed their doctoral studies within the evaluated period (past 5 years) is at least 1.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Increase communication by introducing internal and external seminars for the local engineering community.

Standard B.3.2. The Doctoral School engages a significant number of external scientific specialists in the commissions for public defense of doctoral theses in the analyzed domain.



**general description of the standard analysis.*

Performance Indicator *B.3.2.1. *The number of doctoral theses allocated to one specialist coming from a higher education institution, other than the evaluated IOSUD should not exceed two (2) in a year for the theses coordinated by the same doctoral thesis advisor.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Encourage use of english language for training programs, papers and proposal writing.

Performance Indicator *B.3.2.2. *The ratio between the doctoral theses allocated to one scientific specialist coming from a higher education institution, other than the institution where the defense on the doctoral thesis is organized, and the number of doctoral theses presented in the same doctoral study domain in the doctoral school should not exceed 0.3, considering the past five years. Only those doctoral study domains in which minimum ten doctoral theses have been presented within the past five years should be analyzed.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Included in 3.2.1 above.

Domain C. QUALITY MANAGEMENT

**general description of domain analysis.*

Criterion C.1. Existence and periodic implementation of the internal quality assurance system

**general description of the criterion analysis.*

Standard C.1.1. *There are an institutional framework and procedures in place and relevant internal quality assurance policies, applied for monitoring the internal quality assurance.*

**general description of the standard analysis.*

Performance Indicator C.1.1.1. *The Doctoral school in the respective university study domain shall demonstrate the continuous development of the evaluation process and its internal quality assurance following a procedure developed and applied at the level of the IOSUD, the following assessed criteria being mandatory:*

(a) the scientific work of Doctoral advisors;

(b) the infrastructure and logistics necessary to carry out the research activity;

(c) the procedures and subsequent rules based on which doctoral studies are organized;



d) the scientific activity of doctoral students;
e) the training program based on advanced academic studies of doctoral students;
f) social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Support a program of internal and external seminars. Appoint visiting persons to enhance the student experience.

Performance Indicator *C.1.1.2. Mechanisms are implemented during the stage of the doctoral study program to enable feedback from doctoral students allowing to identify their needs, as well as their overall level of satisfaction with the doctoral study program in order to ensure continuous improvement of the academic and administrative processes. Following the analysis of the results, there is evidence that an action plan was drafted and implemented.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. The report should contain some evidence of professional development and extramural activity.

Criterion C.2. Transparency of information and accessibility of learning resources

**general description of the criterion analysis.*

Standard C.2.1. Information of interest to doctoral students, future candidates and public interest information is available for electronic format consultation.

**general description of the standard analysis.*

Performance Indicator C.2.1.1. The IOSUD publishes on the website of the organizing institution, in compliance with the general regulations on data protection, information such as:

(a) the Doctoral School regulation;

(b) the admission regulation;

(c) the doctoral studies contract;

(d) the study completion regulation including the procedure for the public presentation of the thesis;

(e) the content of training program based on advanced academic studies;

(f) the academic and scientific profile, thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data;

(g) the list of doctoral students within the domain with necessary information (year of registration; advisor);



(h) information on the standards for developing the doctoral thesis;

(i) links to the doctoral theses' summaries to be publicly presented and the date, time, place where they will be presented; this information will be communicated at least twenty days before the presentation.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Ensure current dissemination content is in english.

Standard C.2.2. The IOSUD/The Doctoral School provides doctoral students with access to the resources needed for conducting doctoral studies.

**general description of the standard analysis.*

Performance Indicator C.2.2.1. All doctoral students have free access to one platform providing academic databases relevant to the doctoral studies domain of their thesis.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Continue to support platforms for all data bases.

Performance Indicator C.2.2.2. Each doctoral student shall have access, upon request, to an electronic system for verifying the degree of similarity with other existing scientific or artistic works.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. No comment.

Performance Indicator C.2.2.3. All doctoral students have access to scientific research laboratories or other facilities depending on the specific domain/domains within the Doctoral School, according to internal order procedures.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Encourage increased collaboration and some associated enabling funding.



Criterion C.3. Internationalization

**general description of the criterion analysis.*

Standard C.3.1. There is a strategy in place and it is applied to enhance the internationalization of doctoral studies.

**general description of the standard analysis.*

Performance Indicator *C.3.1.1. *IOSUD, for every evaluated domain, has concluded mobility agreements with universities abroad, with research institutes, with companies working in the field of study, aimed at the mobility of doctoral students and academic staff (e.g., ERASMUS agreements for the doctoral studies). At least 35% of the doctoral students have completed a training course abroad or other mobility forms such as attending international scientific conferences. IOSUD drafts and applies policies and measures aiming at increasing the number of doctoral students participating at mobility periods abroad, up to at least 20%, which is the target at the level of the European Higher Education Area.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Continue to support student mobility both nationally and internationally. Promote projects that enable mobility to be undertaken.

Performance Indicator C.3.1.2. *In the evaluated doctoral study domain, support is granted, including financial support, to the organization of doctoral studies in international co-tutelage or invitation of leading experts to deliver courses/lectures for doctoral students.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. No comment included in 3.1.1

Performance Indicator C.3.1.3. *The internationalization of activities carried out during the doctoral studies is supported by IOSUD through concrete measures (e.g., by participating in educational fairs to attract international doctoral students; by including international experts in guidance committees or doctoral committees etc.).*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

COMMENT. Encourage the registration of overseas PhD candidates by offering dedicated funding.



IV. SWOT Analysis

Herewith some suggested SWOT content which is relevant to the Civil Engineering Domain.

<p><u>Strengths:</u></p> <p>- the strengths identified throughout the report will be resumed as part of the indicators' analysis. Other general strengths that do not fall within a particular indicator may be formulated.</p> <p>Scientific quality of the research undertaken in structures, hydraulics, geotechnics, etc, etc to support a Civil Engineering research infra structure. Ability to incorporate environmental issues within mainstream areas together with the development of novel topics.</p> <p>Well founded and modern laboratory facilities. Academic, technical, management and secretaries. Number and expertise of reseachers.</p>	<p><u>Weaknesses:</u></p> <p>- the weaknesses identified throughout the report will be resumed as part of the indicators' analysis. Other general weaknesses that do not fall within a particular indicator may be formulated.</p> <p>Results of research, the registration of patents and the content of knowledge transfer can can be converted into opportunities.</p> <p>Need to strengthen ongoing industrial collaboration.</p> <p>Develop a strategy to popularise the work conducted in the Civil Domain, hence raising status in the local community.</p>
<p><u>Opportunities:</u></p> <p>- possible lines of action for the development of the institution under review shall be identified;</p> <p>- examples of opportunities: a favorable economic environment in the proximity of the assessed institution, the uniqueness of the study programs and their relevance to the local/national market, the overall attractiveness of the study programs etc.</p> <p>Increase financial support for promising Phd candidates (including from abroad).</p> <p>Increase bilateral mobility through programs such as Erasmus.</p> <p>Establish co operation with like national and international institutions.</p> <p>Take advantage of European funding and form strong links with local industry.</p>	<p><u>Threats:</u></p> <p>- the possible causes of the deficient aspects (the causes of the identified weaknesses), which are practically the threats to the proper functioning of the institution, shall be identified;</p> <p>- besides, there may be external threats, such as: the inopportune economic environment in the proximity of the assessed institution, the conduct of low attractiveness study programs for both candidates and the labor market etc.</p> <p>Training programs for industry.</p> <p>Increase the the possibilities of developing further skills for co ordinators and PhD students.</p> <p>Publication in open access.</p> <p>Establish a repository of publications.</p> <p>Encourage industry to use facilities for routine work to produce income.</p>

V. Overview of judgments awarded and of the recommendations



Only some critical indicators have been added since the overall judgements have been made elsewhere (see previous sections). Some additional recommendations have been added.

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.	CPI	A.2.1.1. The venues and the material equipment available to the doctoral school enable the research activities in the evaluated domain to be carried out, in line with the assumed mission and objectives (computers, specific software, equipment, laboratory equipment, library, access to international databases etc.). The research infrastructure and the provision of research services are presented to the public through a specific platform. The research infrastructure described above, which was purchased and developed within the past 5 years will be presented distinctly	Fulfilled.	Increase size of infrastructure to increase the potential of collaboration between industry and external institutions, increase associated funding.
9.	CPI	A.3.1.1. Minimum three doctoral thesis advisors within that doctoral domain, and at least 50% of them (but no less than three) meet the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates (CNATDCU) in force at the time when the evaluation is carried out, which standards are required and mandatory for obtaining the enabling certification.	Fulfilled.	Increase knowledge transfer.
10.				
11.				

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
12.				
13.	CPI	<p>A.3.2.1. At least 50% of the doctoral thesis advisors in the evaluated domain have at least 5 Web of Science- or ERIH-indexed publications in magazines of impact, or other achievements of relevant significance for that domain, including international-level contributions that indicate progress in scientific research - development - innovation for the evaluated domain. The aforementioned doctoral thesis advisors enjoy international awareness within the past five years, consisting of: membership on scientific boards of international publications and conferences; membership on boards of international professional associations; guests in conferences or expert groups working abroad, or membership on doctoral defense commissions at universities abroad or co-leading with universities abroad. For Arts and Sports and Physical Education Sciences, doctoral thesis advisors shall prove their international visibility within the past five years by their membership on the boards of professional associations, membership in organizing committees of arts events and international competitions, membership on juries or umpire teams in artistic events or international competitions.</p>	Fulfilled.	Increase open access activities to support collaboration.
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
22.	CPI	B.2.1.5. For a doctoral study domain, the ratio between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance must not exceed 3:1.	Fulfilled	No recommendations.
23.	CPI	B.3.1.1. For the evaluated domain, the evaluation commission will be provided with at least one paper or some other relevant contribution per doctoral student who has obtained a doctor's title within the past 5 years. From this list, the members of the evaluation commission shall randomly select 5 such papers / relevant contributions per doctoral study domain for review. At least 3 selected papers must contain significant original contributions in the respective domain	Fulfilled	Increase patents and other knowledge transfer options as well as completion of theses to extend open access.
24.				
25.				
26.				
27.				
28.				
29.	CPI	C.2.1.1. The IOSUD publishes on the website of the organizing institution, in compliance with the general regulations on data protection, information such as: a) the Doctoral School regulation; b) the admission regulation; c) the doctoral studies contract; d) the study completion regulation including the procedure for the public presentation of the thesis; e) the content of training program based on advanced academic studies; f) the academic and scientific profile, thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data; g) the list of doctoral students within the domain with necessary information (year of registration; advisor);	Fulfilled	Ensure good use of English. Try to establish a good communication base for all PhD students and to publicise the facility to improve outreach.



No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		h) information on the standards for developing the doctoral thesis; i) links to the doctoral theses' summaries to be publicly presented and the date, time, place where they will be presented; this information will be communicated at least twenty days before the presentation.		
30.				
31.				
32.				
33.				
34.				
35.				

The recommendations contained in the report shall be resumed in the indicators' analysis. Other general recommendations may be made that do not fit within a particular indicator.

VERY IMPORTANT!!! – Each identified weakness must be correlated with at least one recommendation to improve the situation!

VI. Conclusions and general recommendations

All aspects of the Doctoral field of Civil Engineering and Building Services at UTP fully comply with the details of assessment, which are defined by the ARACIS standards.

Three main indicators have been used to drive the QA process namely, Institutional Capacity, Educational Effectiveness and Quality Management. Within these domains is a very detailed documentation of the components used for the evaluation. Some general recommendations have been made within the body of this report together with a SWOT analysis and it is hoped that these will prove useful.

The evaluating committee should be congratulated in producing such detailed documentation and, in particular, organising the on line meetings to ensure continuation of quality management in very difficult times. The outcome of the exercise should not be lost and that is, the the production of high quality research to enable successful PhD students to take their place in society. The Assessment comprehensively addresses the issues to make this possible.

A comment rather than a recommendation is to consider making a case for the Impact of research within the Civil Engineering industry and carried out at UTP. An item or process may be developed from an early stage such as a masters project, follow through PhD theses to post doctoral work and further research funding. Impact projects are convenient links with industry and lead to patents,



recommendations in codes of practice, industrial processes and design. Several years of research may support the Impact statement. Importantly, Impact projects demonstrate the continuing application of the processes which have been considered in this report and represent continuing good practice.

VII. Annexes

The following types of documents shall be attached:

- *The detailed schedule of the evaluation visit – MANDATORY.*
- *The survey questionnaire applied to doctoral students or academic staff in the doctoral study domain under review, the results - optional (e.g., in graphic form) and their interpretation - if applicable.*
- *Scanned documents – any document requested from the IOSUD during the evaluation visit and received, which is not found in the internal evaluation file received before the visit and referred to in the report.*
- *Pictures – if relevant issues are raised regarding the condition of the student residences, cafeterias, premises for teaching and learning activities, library etc.*
- *Screenshots/Print screens of the Doctoral School/IOSUD website proving specific claims in the report, accompanied by the date when they were accessed and saved.*
- *Any other documents relevant to the evaluation process referred to in the report.*

This report has been prepared by Professor L.F. Boswell (International Expert)

Signed

5th November 2021