

The External Evaluation Report of a Doctoral Study Domain CIVIL ENGINEERING AND INSTALLATIONS

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I. Introduction¹

The objective of this report is to present main findings after evaluation External Evaluation Report of a Doctoral Study Domain Civil Engineering and Installations offered by Technical University of Cluj-Napoca (TUCN). The evaluation of the quality of doctoral study domain at TUCN was carried out by the Romanian Agency for Quality Assurance in Higher Education (ARACIS) as part of the work schedule. The visit was carried out in accordance with the evaluation procedure, remotely in period between 12.07.2021 – 20.07.2021.

Evaluation team consisted with three experts, namely: coordinator, international expert and PhD student.

Doctoral studies in the Technical University of Cluj-Napoca have been organized in the Bologna system. Civil Engineering and Installations study domain belongs to the III cycle of studies. The study programme (IC&I) aims to develop education and research activities at doctoral level, to generate and disseminate scientific knowledge in the field, at the level of Romanian society and community.

In period since 2015 to now 144 students have been enrolled to the programme while 30 thesis have been defended.

II. Methods used

The site visit was prepared and carried out in accordance with the applicable procedure. The visit took place on 12-20 of July 2021. The Visiting Team reviewed the self-assessment report provided by the Technical University of Cluj-Napoca (TUCN). The visit started with online meeting with representatives of the TUCN institution and of the Council for Academic Doctoral Studies (CSUD). Then in following meetings evaluation team took part: 1) Online meeting with the contact person for the doctoral study domain under review and the team who drafted the internal evaluation report, 2) Online meeting with the academic staff corresponding to the doctoral study domain, 3) Online meeting with the members

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



of the Ethics Commission, 4) Online meeting with TUCN IOSUD graduates, 5) Online meeting with graduates of the doctoral study domain IC&I, 6) Online meeting with the Commission for Quality Evaluation and Assurance (CEAC) members/Quality Assurance Department, 7) Online meeting with the Directors/persons in charge of the research centres/laboratories within the doctoral study domain, 8) Online meeting with TUCN Doctoral School Council (CSD members), 9) Online meeting with employers of doctoral graduates in the domain, 10) Face-to-face working meetings attended by team coordinator while visiting the educational and research infrastructure, The visit ended with closing meeting during which the Chair of the Expert Team overviewed and briefly presented on the conclusions of the evaluation process and the main recommendations.

III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

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

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.

The University of Cluj-Napoca assumed effective management system for delivery of Doctoral Study Domain Civil Engineering and Installations programme. The specific regulations of the TUCN Doctoral School activity were assumed.

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

Regulation of the Doctoral School of the Technical University of Cluj-Napoca within IOSUD-TUCN is assumed and in force. Formal methodology for organizing elections and appointing the members of the Council for Doctoral Studies (CSUD) within IOSUD-TUCN was adopted. The methodology includes details on the election of members of the Doctoral School Council and of the Doctoral Programme Coordination Councils from both teaching/research staff, and from PhD students. All internal stakeholders are represented in the Council.

The composition of the new management structure, appointed after the elections are transparent, all information about management is publicly available on the website dedicated to doctoral university studies.

Regulations related to organizing and conducting doctoral studies are assumed like admission of doctoral students, completion of doctoral studies. There are no formal deficiencies in that area however reflection is needed due to following indicators:

- In period since 2015 to now 144 students have been enrolled to the programme while 30 thesis have been defended – it gives success completion rate about 20%. The university should diagnose it.
- A significant number of students are extending their programmes. The university should diagnose the reasons. It might be found in admission criteria.

In the University there have been established the conditions for obtaining the quality of PhD Supervisor and affiliation to the TUCN Doctoral School. Also, a formal mechanism for recognizing the



quality of PhD Supervisor obtained in higher education institutions abroad was elaborated. It is automatic recognition by the Technical University what was approved by the Board of Directors. Same approach was assumed to the doctorate obtained in other states. All regulations are publicly available. In 2017 in the University was proposed to reorganize the doctoral schools into a single doctoral school, called the TUCN Doctoral School and to establish doctoral program coordination councils.

The doctoral study agreement is publicly available. The agreement includes the minimum standards for granting the doctoral degree specific to each field of doctoral studies.

Internal procedures for the review and approval of proposals for the training programme have been prepared and introduced. The mechanisms of analysis and approval of the topic of each doctoral student are implemented and monitoring mechanism of progress (each student) is in place including once every six months by the doctoral student's submission of scientific research reports. The mechanism shall be reevaluated since significant number of programmes are not completed during expected time.

Recommendation

- To verify admission criteria in direction of ensuring higher completion rate of the study programme
- To evaluate internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs in direction of their improvement since significant number of programmes are not completed during expected time

The indicator is fulfilled

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.

The Regulation of the TUCN Doctoral School in force at the date includes mandatory criteria, procedures and standards including:

- on how to accept new members as PhD Supervisor,
- the way in which a PhD Supervisor can be withdrawn as a member of the doctoral school
- The decision-making mechanisms regarding the appropriateness, structure and content of the training program based on advanced university studies,
- changing the PhD Supervisor of a certain doctoral student and the procedures for mediating conflicts,
- conditions under which the doctoral program can be interrupted or extended,
- how to prevent fraud in scientific research, including plagiarism,
- bodies responsible for ensuring access to research resources,
- the attendance obligations of doctoral students.

Recommendations:

none

The indicator is fulfilled.



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

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.

The University possess the necessary IT infrastructure to run the evaluated studies. It assures keeping track of doctoral students and their academic background. One of the dedicated tool is Doctoral School Digitization Platform which is a web application consisting of 10 modules that provides electronic management of information flows in the doctoral school. The platform manages admission data, guidance committee, contracted subjects, research topic and other information for doctoral students.

There is also an integrated system for evaluating teaching, research and managerial activities in TUC-N called SIMAC.

Recommendations:

none

The indicator is fulfilled.

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.

The University uses turnitin anti-plagiarism software is used, to which access has been created for all PhD Supervisors. Turnitin does not automatically detect plagiarism, only identical parts of text. Then it is up to the instructor to interpret the similarity report returned by this tool. It seems that possible fraudulent threats are well prevented.

Recommendations:

none

The indicator is fulfilled.

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.

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.

Evaluation team noted one ongoing international research grant and 3 national grants completed in the last 5 years. The evaluation team considers that (having in mind that total number of student is 144) number



of international or national research grants is small. Lack of research grants might be linked to the domain which is not enough financed however involvement students in application project calls shall be strengthened.

Recommendations:

It is imminent need to involve students in preparation of grant applications and involve them in project-based researches.

The indicator is fulfilled.

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%.*

Within the field of IC&I 138 students are receiving funding from the state budget and 6 doctoral students with a fee. The number of doctoral students financed from the state budget who have benefited from other financing sources, for a period of at least six months is 31.

The number of students receiving financing shall increase in the coming years as University received grant "Entrepreneurial skills and research excellence in doctoral and postdoctoral programs - ANTREDOC" based on which 66 scholarships will be awarded to doctoral students at IOSUD-TUCN level.

Recommendations:

none

The indicator is fulfilled.

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.).*

The University declares 19,2% of expenses paid from doctoral grants and doctoral fees to be used to reimburse professional training expenses. That value fulfills requirements in this indicator

Recommendations:

none

The indicator is fulfilled.

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.



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.

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 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.*

At the beginning of this section it is worth to mention that despite the Covid-19 pandemic University took decision to keep all laboratories, classrooms aparatures etc avialable for PhD studenst for their reserachers. The IC&I students benefits from an extensive research infrastructure of the University. Some of the equipments/labotaories are certified by external bodies. The Univerisyt poses also agreements with industrial parnters for common sharing of their infastructures. It helps in some cases to continue reseach activities in natural-professional enviroment. Both sides could befeit from such agreements.

Recommendations:

none

The indicator is fulfilled.

Criterion A.3. Quality of Human Resources

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

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.*

Evaluated field of Civil Engineering and Installations represents 10 PhD supervisors of which 6 PhD supervisors meet the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates (CNATDCU) in force at the time of the evaluation, necessary and mandatory for obtaining the habilitation certificate. Academic teachers have a current and documented academic achievement in the field.

The qualification structure of teachers is very good, the involvement of teachers in the process of teaching students seems to be very high, which is positive, the number of staff in relation to students on the one hand enables the proper implementation of the objectives of studies, including the



achievement of learning outcomes, on the other hand, however, it seems to lead to an excessive burden on academic teachers. On average there are 14 students per teacher. In some cases workload could be too high. When conducting advanced research, their quality may be degraded due to the individually limited availability of supervisors. Also the stability of the available teaching staff in the long term, due to the realistically higher average age, is not optimistic. The university should define a tailored staffing policy and plan for the admission of new teachers.

Recommendations:

Work on supervisors sustainability and appropriate workload

The indicator is fulfilled.

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.

Currently in the field of Civil Engineering and Installations 5 PhD supervisors are permanently employed by the University. It gives a required level of 50% from the total number of PhD supervisors affiliated to the field. Although the requirement is met, the unit should work to increase the number of teachers permanently associated with it.

Recommendations:

none

The indicator is fulfilled.

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.

The evaluation team found good coherence between subjects and teachers' competences. It must be stated that the disciplines in the training program based on advanced university studies related to the field are supported by teachers who have the quality of doctoral/qualified supervisor, professor or associate professor with proven expertise in the field of taught subjects.

Recommendations:

none

The indicator is fulfilled.



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%.*

There are 4 PhD supervisors who coordinate at the same time more than 8 doctoral students, but not more than 12, during their doctoral studies. However, when we consider students who have extended their programmes the number is higher. In such case 70% of supervisors have more than 8 students. If we consider all 144 students then average number per one supervisor is over 14. In one case data in „Anexa A.3. CENTRALIZATOR CONDUCĂTORI DE DOCTORAT - DOMENIUL INGINERIE CIVILĂ ȘI INSTALAȚII” shows number of 26 students. It means that coordination of doctoral thesis in this field shall be reconsidered.

Recommendations:

Coordination of doctoral thesis shall be reconsidered in direction of smaller workload of supervisors.

The indicator is fulfilled.

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

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.*

There are rather good examples of international scientific visibility of supervisors. Nine PhD supervisors present at least 5 Web of Science indexed publications. Also 8 PhD supervisors demonstrate the international recognition of scientific contributions in the field of doctoral IC&I through awards.

Recommendations:

none

The indicator is fulfilled.

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.



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.*

Nine PhD supervisors have obtained recently more than 112.5 points what it represents 25% from the score required by the minimum standards CNATDCU in force at the date of evaluation, necessary and mandatory for obtaining the University certificate of qualification, based on the scientific results of the last five years. In the field of IC&I, the minimum required score is 450 points (Commission for Civil Engineering and Management).

Recommendations:
none

The indicator is fulfilled.

Domain B. EDUCATIONAL EFFECTIVENESS

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

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.

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.*

Students enrolled to the program comes mainly from the region. However, among attracted annually to the admission candidates who have graduated at master's level other higher education institutions from abroad. The ratio between the number of master's degree graduates of other higher education institutions in the country or abroad who have registered for the competition for admission to doctoral studies in the last 5 years is 31 and the number of places financed from the state budget put up for competition within the doctoral school is 123 what gives value of 25.2%, more than the minimum of 20% required.

Recommendations:
none

The indicator is fulfilled.



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

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.*

The competition for admission to doctoral studies consists of at least two stages:

- An interview in which the candidate's level of training and scientific/professional interests, research skills and proposed topic for the PhD thesis are analyzed,
- a language proficiency test for an international language.

Also, there is in place compulsory interview with candidates. Selection criteria are applied, which are publicly available. Admission conditions, selection criteria and procedures are transparent and ensure equal opportunities for candidates. The selection criteria are selective and allow for the selection of candidates possessing appropriate knowledge and skills at the level necessary to fulfil the objectives of the studies. There are no elements discriminating against any group.

Recommendations:

none

The indicator is fulfilled.

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%.*

The dropout scale is below the 30% threshold, what give the fulfillment of this criterion (according to data 12%). However, there is still significant number of programs being extended. It should make University to evaluate possible reasons.

Recommendations:

University should evaluate possible reasons of extensions of programs.

The indicator is fulfilled.

Criterion B.2. The content of doctoral programs

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.

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.



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.*

The University assumed program for the study field of Civil Engineering and Installations. The training program based on advanced university studies related to the IC&I doctoral field is composed of disciplines within the research master's degree programs. However, program should be very well anchored in level 8 of national qualification framework. It should have adequate benchmarks. It is not clear how it is ensured. Another issue is the ability of students to conduct formal research. The degree to which candidates are prepared for this may vary so it would be good to include a research methodology course in the program.

Recommendations:

To include a research methodology course in the program.

The indicator is fulfilled.

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.*

There is a course of ethics and academic integrity. The course is mandatory, is dedicated to ethics in scientific research and intellectual property and has a well-defined topic on this subject.

Recommendations:

none

The indicator is fulfilled.

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.*

There are mechanisms for reviewing the content of doctoral degree programs assumed at the University. There is a formal regulation at the Doctoral School. Main responsibility for the structure, content, conduct and organization of the doctoral training program of the doctoral student lies with the doctoral supervisor. The supervisor is directly responsible for the PhD student's scientific pathway and is obliged to do everything possible to provide support and information to maximize the chances of successful completion of the PhD program. Since there is significant number of programs prolonged the supervisors shall be somehow supported by university in more efficient way. One might also

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.



consider if 3 years PhD program is long enough to achieve intended learning outcomes at level 8 of qualification framework?

Recommendations:

none

The indicator is fulfilled.

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.

There is guidance committee that meet at a maximum of 6 months and offer the doctoral student research directions corresponding to the topic. It seems that committee together with supervisor play most important role in counselling.

Recommendations:

none

The indicator is fulfilled.

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.

The ratio between the number of doctoral students (144) and the number of teachers/researchers (86) who provide guidance is equal 1.67:1

Recommendations:

none

The indicator is fulfilled.

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

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

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.

Each doctoral student presented an article in prestigious international events in the last five years. This note refers to the students who defended their thesis. The pandemic doesn't help to take part in conferences as many of them suspended their editions.



Recommendations:

none

The indicator is fulfilled.

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.*

Thirty doctoral theses have been defended during last 5 years within evaluated doctoral field. Each doctoral student had a presentation. Criterium is fellfield.

Recommendations:

none

The indicator is fulfilled.

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.

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.*

Doesn't refer to the evaluated field.

Recommendations:

none

The indicator is fulfilled.

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.*

Doesn't refer to the evaluated field.

Recommendations:



none

The indicator is fulfilled.

Domain C. QUALITY MANAGEMENT

**general description of domain analysis.*

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

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.

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.*

Both at the level of the University and at the level of the Doctoral school, bodies responsible for the substantive, organizational and administrative supervision of educational activities and for ensuring and improving the quality of education have been appointed. The structure of the University Educational Quality Assurance System at the central level consists of:

- The Commission for Quality Assessment and Assurance (CEAC), which monitors and coordinates the implementation of the quality function at institutional level.
- Office for Quality Assurance, responsible for coordinating the quality assurance process at the educational level and assisting management in making strategic decisions regarding quality.
- Quality managers at the level of faculties and Doctoral School, responsible for implementation.

The quality system assumed comprehensive methodology for self-assessment of IOSUD-TUCN. It covers following aspects:

- the scientific activity of PhD Supervisors,
- the infrastructure and logistics necessary for carrying out the research activity,
- the procedures and subsequent rules on the basis of which the doctoral studies are organized,
- the scientific activity of doctoral students,
- the training program based on advanced university studies of doctoral students.

The program of studies in the field of study is subject to evaluation, conducted by the Quality Commission. The key function in evaluating the curriculum is played by the supervisors, who may



initiate changes or introduce new items. In addition, students and external stakeholders may also initiate changes to the program. The annual evaluation of the study program also includes an evaluation of the quality of scientific activity.

System elaborated new procedures or measures related to social, academic support services and counselling services.

Among services provided by university there is Ethic Commission. Although there were no matters noted for the Commission to be addressed, the evaluation team perceives that the appeal procedures with this Commission are not clear. It is recommended that universities analyze the appeals pathway and make any objective changes if needed.

Recommendations:

To evaluate appeal procedure for Ethic Commission.

The indicator is fulfilled.

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.

Students are included in periodic reviews of the student support system and their contributions are taken into account when improving the support described and its forms. The University conducts a number of surveys focusing on different aspects of the student support system, satisfaction and needs. Gathered results are discussed at the CSUD meeting and then published on the IOSUD website in form of report.

Recommendations:

none

The indicator is fulfilled.

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

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

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.

The University launched dedicated web platform for information distribution. Information about programs, standards, agreements, organization of study, admission etc. could be found there. Additionally, the summaries of the doctoral theses to be defended publicly, as well as the date, time and place where they are to be defended are available on the platform. Access to the platform is not restricted.

Recommendations:

none

The indicator is fulfilled.

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

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.*

University ensures free electronic access to the scientific and research literature with wide range of national and international scientific databases. Also, University provide access to the “hard” infrastructure despite pandemic situation. During whole period of pandemic anyone who wanted to use equipment, test bench or aperture could do it basing on formal procedure assumed by the University.

Recommendations:

none

The indicator is fulfilled.

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.*

The University has got a subscription to the specialized platform for verifying the similarity (antiplagiarism) called TURNITIN.



All doctoral theses are verified using this platform as part of the process of preparing public support, and the doctoral student and the supervisor assume the results of the verification performed in accordance with internal regulations and good practices specific to the field, by signing a dedicated form.

All PhD Supervisors have individual accounts in the system. Doctoral students have access through supervisors. It means they can get access to the reports - results of the verification. Although there is not direct access provided for the students to the system. The evaluation team has no objection unless whole, not restricted access to the results is ensured by supervisor before any remarks made by them and after (on every stage of verification).

Recommendations:

none

The indicator is fulfilled.

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.*

As mentioned in previous part of the report access to the scientific research laboratories is granted despite pandemic situation. General access is stipulated in regulations specific to the kind of doctoral studies taking into account for instance a safety precautions or value of the equipment. Also evaluation team noted during meetings with internal and external stakeholders that there are possibilities to have access to research infrastructure being in command of industry partners.

Recommendations:

none

The indicator is fulfilled.

Criterion C.3. Internationalization

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

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.*

The University offers students the opportunity to benefit from student exchange program under the Erasmus+. University poses 27 agreements with international HEI. University indicates totally 52



mobilities during last five years. Most of them are attendance in international conferences. There is visible low number of mobilities associated with longer periods of stay like internships. Pandemic Covid-19 could have negative impact here. University should encourage its students to take advantage from mobilities.

Recommendations:

University should encourage its students to take advantage from mobilities.

The indicator is fulfilled.

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.*

There are good examples of involvement of international experts in the study process. In the evaluated period there were 2 doctoral theses elaborated with international co-supervision. Also, numerous courses and seminars were organized for doctoral students which were attended and presented by international experts.

Recommendations:

none

The indicator is fulfilled.

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.).*

Evaluation team noted some involvement on the part of international experts of academic and research value. There are examples of inclusion of the international experts comprised in the commissions for defending the doctoral theses or in the guidance commissions.

Recommendations:

none

The indicator is fulfilled.

IV. SWOT Analysis

<p><u>Strengths:</u></p> <ul style="list-style-type: none"> • long experience in research and providing PhD programme • good regional recognition and setting • assured access to infrastructure despite Covid pandemic • high commitment of internal stakeholders 	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> • not clear appeal procedures applied • workload of supervisors might be too high • Low international mobility of PhD students • Low number of research grants • Objectively high age of supervisors
<p><u>Opportunities:</u></p> <ul style="list-style-type: none"> • benefit from international research programmes and mobilities • demand from industry for high-level professionals and researchers 	<p><u>Threats:</u></p> <ul style="list-style-type: none"> • common extensions of programmes • supervisors sustainability at risk

V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (*, C)	Performance indicator	Judgment	Recommendations
1	A	A.1.1.1	<i>Fulfilled</i>	1. To verify admission criteria in direction of ensuring higher completion rate of the study programme 2. To evaluate internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs in direction of their improvement since significant number of programmes are not completed during expected time
2	A	A.1.3.1	<i>fulfilled</i>	It is imminent need to involve students in preparation of grant applications and involve

				them in project-based researches.
3	A	A.3.1.1	Fulfilled	Work on supervisors sustainability and appropriate workload
4	A	A.3.1.4	Fulfilled	Coordination of doctoral thesis shall be reconsidered in direction of smaller workload of supervisors.
5	B	B.1.2.2.	Fulfilled	University should evaluate possible reasons of extensions of programs.
6	B	B.2.1.1.	Fulfilled	To include a research methodology course in the program.
7	C	C.1.1.1.	Fulfilled	To evaluate appeal procedure for Ethic Commission.
8	C	C.3.1.1.	Fulfilled	University should encourage its students to take advantage from mobilities.

VI. Conclusions and general recommendations

The educational and scientific concept of Doctoral Study in Domain of Civil Engineering and Installations offered by Technical University of Cluj-Napoca are in line with the university's mission and quality policy. The concept and objectives of study correspond to the profile of the University and are oriented to the needs of today's social and economic environment. Evaluated Doctoral Study of Civil Engineering and Installations is having good regional recognition.

The programme is comprehensive and specific to the components forming it and ensures the achievement of the planned goals. However, it seems appropriate to include research methodology in the study programme as not all students may have the required competences in this field. The duration of studies until graduation is correctly estimated and ensures the achievement of the assumed effects by students. However, there are a large number of cases of programme extensions. This situation should be investigated at University or national level.

Competences, experience and qualifications of supervisors and other teachers conducting the studies ensure proper implementation of the studies and achievement by students the intended objectives of the studies. Teachers are highly committed to the process of conducting the studies. However, the staff policy of the university should take into account the fact of a high workload of supercvisors and age in the context of ensuring continuous sustainability of the studies.

Substantive, organisational and administrative supervision of the studies is provided. The responsibilities of the individual bodies supervising the studies, including the responsibility for



ensuring and improving the quality of studies, are well defined. Existing appeal procedures shall be reconsidered.

Admission to study programme is based on formally defined criteria. Evaluation of the programme is carried out based on the opinions of internal and external stakeholders, in particular supervisors, and the results of this evaluation lead to improvements in the programme. General picture of Doctoral Study in Domain of Civil Engineering and Installations is positive with minor recommendations indicated in this report.

VII. Annexes

None