

**Politehnica University of Bucharest**

Regulations



**Doctoral School of  
Electronics, Telecommunications  
and Information Technology**

**SD-ETTI**

Approved by the Doctoral School on 28-01-2021  
Approved by the Doctoral School Council on 21-01-2021

**Bucharest, 2021**



## Contents

1. General Principles .....	3
2. SD-ETTI Organization and Operation .....	4
2.1 SD-ETTI Structure .....	4
2.2 SD-ETTI Positions and Roles .....	6
2.3 SD-ETTI Members .....	7
2.4 Partnerships .....	8
3. Doctoral Selection and Admissions .....	8
4. Doctoral University Study Program .....	9
4.1 Duration of the Doctoral Program .....	9
4.2 Competencies Provided by the Doctoral Study Program .....	10
4.3 Structure of Doctoral University Studies .....	10
4.3.1 Cycle I Advanced Training Program (PPA) .....	11
4.3.2 Cycle II Scientific Research Program (PCS) .....	12
4.4 Cotutelle Degrees .....	14
5. Doctoral Thesis .....	15
5.1 Structure of Doctoral Thesis and Abstract .....	15
5.2 Doctoral Committee .....	18
5.3 Public Defence .....	20
5.4 PhD Title .....	24
6. Doctoral Students .....	25
6.1 Guiding of Doctoral Students .....	25
6.2 Rights and Obligations of the Doctoral Student .....	26
6.3 Mobility Opportunities for Doctoral Students .....	29
7. Doctoral Supervisors .....	29
7.1 Doctoral Supervisor Status .....	29
7.2 Rights and Obligations of the Doctoral Supervisor .....	30
8. Funding of Doctoral University Studies .....	32
9. Quality of Doctoral University Studies .....	32
10. Final Provisions .....	34
Annex 1 Doctoral Studies Contract Template .....	35
Annex 2 Catalog Sheet Template .....	41
Annex 3 PPA Graduation Certificate Template .....	43
Annex 4 Cotutelle Agreement Template .....	44



Annex 5 Doctoral Thesis Template.....	49
Annex 6 Doctoral Thesis Summary Template.....	74
Annex 7 Preliminary Stages to the Public Defense.....	85
Annex 8 Content of the Doctoral Thesis Defense Dossier .....	86
Annex 9 Public Access to the Doctoral Thesis.....	88



# 1. General Principles

## Article 1

- 1) The Doctoral School of Electronics, Telecommunications and Information Technology (SD-ETTI) is established and operates in accordance with the following normative acts:
  - a) The National Education Law no. 1/2011 with subsequent amendments and completions.
  - b) The Code of Doctoral Studies approved by H.G. no. 681/2011.
  - c) Law no. 288/2004 regarding the Organization of university studies, with the amendments from Law no. 49/2013.
  - d) Order no. 3482/2016 on the approval of the Regulation on the organization and functioning of the National Council for Attestation of University Degrees, Diplomas and Certificates (CNATDCU).
  - e) Order no. 6102/2016 for the approval of the Framework Methodology regarding the organization of the admission in the cycles of undergraduate, master and doctoral studies, with the subsequent modifications from the Order no. 3062/2018.
  - f) Order no. 5923/2016 for the approval of the Methodology regarding the recognition of the doctoral degree and the doctoral degree in sciences or in a professional field, obtained abroad.
  - g) Order no. 5110/2018 regarding the approval of the minimum national standards for granting the doctoral title.
  - h) Order no. 3131/2018 on the inclusion of ethics and academic integrity courses in the curricula, for all university study programs organized in higher education institutions in the national education system.
  - i) Order no. 5229/2020 on the approval of the Methodologies regarding the granting of the habilitation certificate, the granting of the doctoral title, as well as the settlement of complaints regarding non-compliance with quality or professional ethics standards, including regarding the existence of plagiarism.
  - j) Order no. 3200/2020 on the approval of the Methodology for the evaluation of doctoral studies and the systems of criteria, standards and performance indicators used in the evaluation.
  - k) The Charter of the Politehnica University of Bucharest.
  - l) Regulations for the Organization and Conduct of University Doctoral Studies within UPB.
  - m) Regulation for Granting the Habilitation Title within UPB.
- 2) The doctorate is the third cycle of university studies offered at UPB.



- 3) SD-ETTI offers scientific doctoral type study programs. The purpose of the scientific doctorate is to produce original scientific knowledge, relevant internationally, based on scientific methods.
- 4) SD-ETTI is affiliated to the Organizing Institution for University Doctoral Studies (IOSUD) from UPB.
- 5) SD-ETTI coordinates doctoral study programs in the fundamental field of Engineering Sciences and the doctoral field of Electronic Engineering, Telecommunications and Information Technology.

#### **Article 2**

- 1) The regulation for the organization and development of doctoral studies of the SD-ETTI defines the principles and rules underlying the operation of doctoral studies programs in the Faculty of Electronics, Telecommunications and Information Technology (ETTI) Bucharest.
- 2) This regulation is an integral part of the Regulation for the Organization and Conduct of University Doctoral Studies within UPB.
- 3) The regulation also applies to co-supervised doctoral study programs, if so decided by the partnership agreement.

## **2. SD-ETTI Organization and Operation**

### **2.1 SD-ETTI Structure**

#### **Article 3**

- 1) SD-ETTI benefits from the institutional, administrative and logistical support of IOSUD-UPB.

#### **Article 4**

- 1) In the structure IOSUD-UPB, SD-ETTI has the rank of Department and according to the provisions of art. 131 and art. 133 para. (4) and art. 134 of LEN (the National Education Law) no. 1/2011, may organize research centers and/or laboratories that function as revenue and expenditure units within UPB.
- 2) SD-ETTI is led by a Director and the Doctoral School Council (CSD). The director of SD-ETTI is assimilated to the Department Director. The CSD is assimilated to the Department Council and has 5-9 members.

#### **Article 5**

- 1) The CSD includes:
  - a) The SD-ETTI Director.



- b) Doctoral supervisors from the doctoral school (maximum 50% of the CSD).
  - c) PhD students (maximum 20% of the CSD).
  - d) Acknowledged individuals from outside UPB with relevant activity in the field of Electronic Engineering, Telecommunications and Information Technology.
- 2) The director and the members of the CSD are elected by universal, direct, secret and equal vote of the doctoral supervisors, according to the Doctoral School Election Regulations.
  - 3) The term of the CSD is 4 years. PhD students who are members of the CSD who complete their doctoral studies during the term of the board lose their board membership at the date of the public defense of the doctoral thesis.
  - 4) In order to fill vacancies in the CSD, partial elections are organized and the term of office of the new member expires at the end of the term.
  - 5) The operative management of SD-ETTI is ensured by the Director of SD-ETTI and the CSD Bureau composed of 4 members of the board.
  - 6) The CSD shall meet as often as necessary, but at least three times a year, at the request of the director or at least three of its members. The Council Bureau sets the agenda for the meetings, on the basis of proposals made by CSD members. Members of SD-ETTI and representatives of research institutes, SD-ETTI partner companies can participate in the CSD meetings as guests.
  - 7) The main attributions of CSD are:
    - a) To devise the doctoral school regulations.
    - b) Making decisions regarding the granting or revocation of the membership of the doctoral school to some doctoral supervisors, as well as the establishment of minimum standards of scientific performance in order to objectively apply these procedures.
    - c) Enrollment and expulsion of doctoral students.
    - d) Approval of steering committees.
    - e) Approval of the commissions for public defense of doctoral theses.
    - f) Endorsement of curricula.
    - g) Assisting external evaluators for accreditation/re-accreditation or provisional authorization of the doctoral school.
    - h) Elaboration of SD-ETTI function statements.
    - i) Correct and complete information of doctoral students and doctoral candidates on the ways of admission to the doctorate, the content of the doctoral study programs, the criteria for evaluating the research results and their capitalization on the labor market.
    - j) Evaluation of doctoral study programs.
    - k) Establishing procedures for monitoring, evaluating and approving doctoral theses for public defense.
    - l) Organizing the public defense of doctoral theses.



- m) Proposals to grant the title of Doctor Honoris Causa to scientific, cultural, social or political personalities; the proposals are submitted to IOSUD-UPB, after approval by consensus of the SD-ETTI members.
  - n) Concluding agreements and partnerships for the development of doctoral study programs and co-supervised doctorates.
  - o) Elaboration, at the end of each calendar year, of a report of scientific and financial activity of SD-ETTI.
  - p) Solving all complaints received from doctoral students and doctoral supervisors. If they exceed the competences of the CSD, they are submitted to the specialized commissions of the UPB, such as the Ethics Commission, for deviations from professional and research ethics and deontology.
  - q) Other specific tasks.
- 8) The main attributions of the Director of the doctoral school are:
- a) Ensures the collaboration between the doctoral school and the departments and faculties within UPB.
  - b) Responsible for due legal process in organizing and conducting all activities of the doctoral school.
  - c) Ensures the representation of the doctoral school towards the IOSUD-UPB management.
  - d) Coordinates the elaboration of the curriculum for the specialized disciplines from the Advanced University Training Program (PPA) and approved by CSD.
  - e) Organizes and monitors the development of activities within the training programs for doctoral students.
  - f) Organizes and monitors the admission to doctoral studies.

## 2.2 SD-ETTI Positions and Roles

### Article 6

- 1) The list of positions of SD-ETTI is drawn up annually, at least 15 days before the beginning of each academic year and cannot be changed during the academic year.
- 2) The list of positions is drawn up by consulting the members of SD-ETTI, following the specification of the teaching and research tasks by the CSD.
- 3) The list of positions of the doctoral school is endorsed by the CSUD and approved by the University Senate.
- 4) The length of time for course activities represents 3 conventional hours, and the length of time for laboratory, project or seminars, 2 conventional hours.
- 5) The teaching activity within SD-ETTI is paid at an hourly rate. In special cases, the CSD may decide to supplement the basic norm of a teacher with classes at the



doctoral school. In this case, an order note is issued to the department to which the teacher belongs.

#### **Article 7**

- 1) The doctoral student can carry out teaching activities, according to the doctoral studies contract.
- 2) During their doctoral studies, doctoral students, who are not included in the department positions, are assimilated as research assistants.
- 3) In SD-ETTI, research staff, associate research staff, including students from all 3 cycles, as well as other categories of staff are allowed to occupy distinct and separate positions, according to the law. Their employment is done according to the law.

### **2.3 SD-ETTI Members**

#### **Article 8**

- 1) SD-ETTI members are doctoral programme supervisors and doctoral students. In addition, SD-ETTI includes, without the right to vote, specialists from the steering committees.
- 2) The SD-ETTI doctoral supervisors can be teachers and researchers from the Faculty of Electronics, Telecommunications and Information Technology in Bucharest, affiliated leaders, members of other universities with which consortia/partnerships have been created or of research institutes with which partnerships have been concluded, according to the Code of Doctoral Studies. They can also be affiliated leaders who have obtained the right to conduct a doctorate in any European Union member country, according to the MECTS (Ministry of Education, Research, Youth and Sports) Order no. 5690 of 13.10.2011.
- 3) Up to one third of SD-ETTI doctoral supervisors may come from foreign academic or research institutions.
- 4) The acceptance of new doctoral supervisors is proposed by the CSD, after the analysis of the habilitation file approved by CNADTCU (National Council for Attestation of University Degrees, Diplomas and Certificates) and approved by the UPB Senate. The CSD may reject the admission of a member if the topic of their development plan is not compatible with the SD-ETTI scientific program.
- 5) The steering committee is made up of faculty and specialists in electronic engineering, telecommunications and information technology from other academic or research institutions, industry, etc., who possess a doctorate title. They are members of SD-ETTI only for the duration of the doctorate programmes they direct.





## 2.4 Partnerships

### Article 9

- 1) National and international cooperation and mobility at the doctoral level is an important component of the doctoral studies program.
- 2) SD-ETTI can conclude partnership agreements with universities, research institutes and industrial companies, domestically and abroad.
- 3) The purpose of partnership agreements is to:
  - a) Create and develop links with industry and research institutions.
  - b) Provide doctoral students with access to professional equipment and software.

## 3. Doctoral Selection and Admissions

### Article 10

- 1) SD-ETTI ensures the transparency of the selection and admission procedures to doctoral studies, evaluation criteria, and the candidates' standards.
- 2) The admission of doctoral candidates to the vacant positions is made through an annual competition organized by SD-ETTI, usually before the academic year. The doctoral school publishes the following information regarding the admission on the SD-ETTI website 30 days before the contest, at [www.sdetti.upb.ro](http://www.sdetti.upb.ro):
  - a) The eligibility conditions;
  - b) The number of budgeted and fee positions;
  - c) The admission calendar;
  - d) The contents of the competition file, registration forms and the admission fee;
  - e) The methodology for the admission contest.
- 3) According to the current legislation, only graduates with a master's degree or equivalent obtained domestically or abroad have the right to participate in the admission contest for doctoral university studies.
- 4) During the admission sign up, the doctoral student must have the approval of the future doctoral supervisor on their registration form.
- 5) The validation of the admission results and the successful candidates' registration in the competition are done by SD-ETTI and approved by CSUD.
- 6) During registration, the doctoral supervisor and the doctoral student will complete and sign a contract for doctoral studies, following the model in Annex 1, an integral part of this regulation.
- 7) Candidates who have been expelled from doctoral studies have the right to enter a new admission competition only for paid positions.
- 8) The admissions commissions for doctoral studies are proposed by CSD on specialized fields. The Admissions Committee is composed of the Director of SD-



ETTI or another member of the CSD Bureau, chair, and four other members, such as doctoral supervisors, who work in the field.

## 4. Doctoral University Study Program

### Article 11

- 1) SD-ETTI ensures the organisation's transparency and development of doctoral university study programs (according to Art. 13 of the IOSUD - UPB Regulation). Information on the general structure of the Advanced Training Program (PPA) and the Scientific Research Program (PCS) is published on the SD-ETTI website at [www.sdetti.upb.ro](http://www.sdetti.upb.ro).

### 4.1 Duration of the Doctoral Program

#### Article 12

- 1) The duration of the doctoral program is 3 years.
- 2) The duration of the doctoral program may be extended by a maximum of 2 years, at the proposal of the doctoral supervisor, with the approval of the SD-ETTI Council and the approval of the UPB Senate, after evaluating the results obtained in the individual scientific research program.
- 3) Doctoral studies may be interrupted in exceptional cases such as maternity/paternity leave, parental leave, medical leave or fortuitous cases. The interruptions are possible at the doctoral student request and must be approved by the CSD along with the approval of the doctoral supervisor.
- 4) Interruptions can only be requested and granted during extension periods in special cases (maternity, illness).
- 5) The duration of doctoral studies is extended by the cumulative periods of approved interruptions; these periods must not exceed a total of 2 years.
- 6) In the case of doctorates financed by doctoral grants, during the extension period caused by the interruption of studies, an extension of the financing may be received under the Contract for University Doctoral Studies conditions.
- 7) The extension, respectively the interruption of the doctoral university studies, is the object of an additional act to the contract of doctoral university studies and can be realised for one or two semesters. Fractional extension/interruption periods are not allowed.
- 8) If the doctoral student fails to complete the thesis within the term established by the doctoral studies contract and any additional documents, he has a grace period of maximum 4 years to complete and publicly defend the thesis; exceeding this limit automatically leads to expulsion.



- 9) During the grace period specified in the previous paragraph, the doctoral student pays the annual doctoral fee established by the decision of the UPB Senate at the proposal of the CSUD, with the approval of the UPB Board of Directors.
- 10) During the grace period provided in Art. 12 par. 8 interruptions/extensions of the doctoral studies cannot be granted, and it is not possible to benefit from a doctoral scholarship.

## 4.2 Competencies Provided by the Doctoral Study Program

### Article 13

- 1) The doctoral university studies, called short doctorate, represent the third cycle of university studies. Its purpose is to develop competent human resources to carry out scientific research and be capable of entering the highly qualified labour market.
- 2) The doctoral university studies provide the competencies of the level 8 qualification from the European Qualifications Framework (EQF) and the National Qualifications Framework.
- 3) By going through the cycle of doctoral studies, the doctoral students acquire professional and transversal skills.
- 4) Professional competencies prove the ability to select, combine, and use knowledge appropriately in the Electronic Engineering, Telecommunications and Information Technologies field to design and implement new electronic and computer systems or optimise the performance of functional systems in terms of effectiveness and efficiency.
- 5) Transversal competencies refer to teamwork skills, facilities in oral and written communication in both Romanian and English, use of information and communication technology, recognition and respect for diversity and multiculturalism, autonomy and permanence of learning, initiative and entrepreneurship, etc.

## 4.3 Structure of Doctoral University Studies

### Article 14

- 1) Doctoral university studies are planned out in two cycles:
  - a) The Advanced Training Program (PPA), carried out in the first 6 months after the enrollment of doctoral students;
  - b) The Scientific Research Program (SCP), with a minimum duration of 33 months.
- 2) The two components of the doctoral university program are complementary.



### 4.3.1 Cycle I Advanced Training Program (PPA)

#### Article 15

- 1) The PPA is conducted based on a curriculum that contains several disciplines of study.
- 2) The PPA curriculum is developed by the Doctoral Supervisor and endorsed by the CSD.
- 3) The disciplines provided in the curriculum are general and specialised. These are:
  - a) Three general disciplines organised at IOSUD - UPB level, relevant for the training in scientific research of doctoral students;
  - b) At least one general discipline intended for a thorough study of research methodology and/or statistical data processing;
  - c) Another general discipline is dedicated to ethics in scientific research and intellectual property;
  - d) Two specialised disciplines that can be: disciplines based on individual study coordinated by the Doctoral Supervisor, courses organised by SD-ETTI or other doctoral schools in the country and abroad, for a group of doctoral students.
- 4) The evaluation of doctoral students in the specialised disciplines is quantified by grades recorded in the catalogue sheets.
- 5) The catalogue sheets have the model in Annex 2, which is an integral part of this regulation.
- 6) The catalogue sheets are completed in 3 copies: one remains with the doctoral student, another with the supervisor, and the third is kept at the SD-ETTI secretariat.
- 7) The assigned grades can be: "Very good", "Good", "Satisfactory" or "Unsatisfactory".
- 8) The discipline is considered promoted, and the student is declared Admitted if he obtains one of the grades "Very good" or "Good".
- 9) In case of obtaining the grade "Satisfactory" or "Unsatisfactory", the doctoral student is Rejected and must repeat the evaluation within 30 days.
- 10) Each discipline in the curriculum ends with Admitted/Rejected.
- 11) The PPA ends with the global grade Promoted/Unpromoted. If only one discipline is completed with Rejected, then the result for PPA is Unpromoted; the doctoral student can repeat the discipline/disciplines in question until the end of the doctoral programme.
- 12) Completion of the PPA with the Promoted result ensures the obtaining of 30 ECTS credits.
- 13) The end of the PPA cycle with the overall Unpromoted result does not prevent the doctoral student from accessing the Scientific Research Program.



- 14) Credits obtained in a research master's program, previous doctoral programs or scientific research internships, carried out in the country or abroad, in universities or prestigious research-development units, can be recognised as equivalent to the proposal of the doctoral supervisor and with the approval of the CSD.

#### **Article 16**

- 1) After the PPA stage, the doctoral student continues with the Scientific Research Program (PCS).
- 2) If the doctoral student does not pass the PCS stage for various reasons but has passed the PPA cycle, he/she can receive a PPA Graduation Certificate upon request.
- 3) The graduation certificate has the model in Annex 3, which is an integral part of this regulation.

#### **4.3.2 Cycle II Scientific Research Program (PCS)**

#### **Article 17**

- 1) The PCS has as its primary objective the elaboration of the doctoral thesis and the formation of professional and transversal competencies.
- 2) The PCS is based on an individual scientific research plan developed by the Doctoral Supervisor, supported by the steering committee and endorsed by the CSD.
- 3) The activities of the PCS are usually assigned in a:
  - a) National or international scientific contract, within SD-ETTI, research centres or UPB departments. In the contract, the doctoral student is directly involved in solving specified objectives;
  - b) Scientific research project with other universities, research institutes or industrial companies, with which SD-ETTI has concluded partnership agreements. The partner institutions must allow the doctoral student to use the equipment provided for experiments, characterisations and tests, simulations, etc;
  - c) Scientific collaboration agreements with other universities, research institutes, companies.
- 4) The research activity of the doctoral student is evaluated by elaborating four research reports:
  - a) A report during the first year, 6 months after the completion of the PPA, in the form of a project that must contain: the title of the doctoral thesis, the outlines of the future thesis, the state of knowledge in the field, study objectives, research methodology, schedule of activities, etc;



- b) Three reports presented as follows: one up to 12 months after the completion of the PPA, the next up to 18 months after the completion of the PPA and the last one up to 24 months after the completion of the PPA;
  - c) The terms for supporting the research reports are provided in the individual scientific research plan. The support terms can be extended by a maximum of 6 months, at the request of the doctoral student, with the approval of the Doctoral Supervisor and the doctoral school Director. If the reports were not submitted within the stipulated term, the doctoral student is proposed for expulsion.
- 5) The 3 research reports in paragraph 4 (b) may be:
    - a) Future chapters of the doctoral thesis and/or,
    - b) parts of scientific research reports on national or international projects in which the doctoral student is directly involved,
    - c) articles published or sent for publication in which the doctoral student is the main author. SD-ETTI encourages the presentation as research reports of papers submitted for publication in journals or presented at conferences.
  - 6) The presentation of research reports may be made public. The presentation is held before the Doctoral Supervisor and at least two of the Steering Committee members.
  - 7) The evaluation of the research reports is done through grades that will be recorded in the catalogue sheets.
  - 8) The grades that can be assigned are "Very good", "Good", "Satisfactory" or "Unsatisfactory".
  - 9) The report is considered Admitted if the doctoral student obtains one of the grades "Very good", "Good" or "Satisfactory".
  - 10) In case of rejection of a report (the grade "Unsatisfactory"), the doctoral student can redo and present it again, following the same procedure, within 30 days from the date of rejection. If the report is rejected a second time, the doctoral student is proposed for expulsion.
  - 11) The catalogue sheets, having the model in Annex 2, are completed in 3 copies: one remains for the doctoral student, another for the supervisor, and the third is kept at the SD-ETTI secretariat.
  - 12) For each research report, the doctoral student accumulates 30 ECTS credits. Completion of the PCS ensures that 120 ECTS credits are obtained.

#### **Article 18**

- 1) The doctoral thesis title can be modified with the Doctoral Supervisor consent and with the CSD approval at least one month before submitting the thesis to SD-ETTI.



#### Article 19

- 1) During the doctoral studies, the doctoral student, under the coordination of the doctoral supervisor, must elaborate and publish scientific papers with topics related to the scientific research program and the doctoral thesis.
- 2) Original contributions will be published in journals or conferences indexed by WOS and/or indexed in International Databases (BDI) and/or in volumes of well-rated conferences and/or national and international patents.
- 3) In the Electronic Engineering, Telecommunications and Information Technology field, the following international databases are recognised by CNADTCU as BDI: WOS, Scopus, IEEE Xplore, Science Direct, Elsevier, Springerlink, ACM, DBLP, EURASIP.
- 4) In the papers published during the doctoral studies, the doctoral student appears with affiliation to UPB.

### 4.4 Cotutelle Degrees

#### Article 20

- 1) SD-ETTI can organise co-supervised doctorates if the research is interdisciplinary or requires activities carried out in several academic institutions.
- 2) In co-supervision, the doctoral student is guided by a Supervisor from SD-ETTI and another from the doctoral school with which the co-supervision agreement was made. A primary Doctoral Supervisor is defined who coordinates the study and research activities of the doctoral student.
- 3) The co-supervised doctorate is carried out based on a co-supervised agreement/contract concluded as follows:
  - a) Between doctoral supervisors, if both doctoral supervisors work at IOSUD - UPB;
  - b) Between IOSUD - UPB and other institutions organising doctoral studies in the country or abroad. In this case, the co-supervision agreement or contract is endorsed by the Doctoral Supervisor and the SD-ETTI Director and is approved by CSUD. The co-supervision agreement/contract is kept in the doctoral student's file.
- 4) The co-supervision agreements aim to:
  - a) Have international recognition of the doctorate;
  - b) Exchange with other doctoral schools, of professors and students, at courses and seminars organized for doctoral studies;
  - c) Assign titles and/or certificates jointly with other IOSUDs, from the country or abroad to recognize as widely as possible the acquired competencies.





- 5) Co-supervision agreements or contracts must follow specific legislation and must explicitly state:
  - a) Scientific and financial responsibilities of the parties;
  - b) Responsibilities related to the official defence of the thesis.
- 6) For the agreement, the model in Annex 4 may be used, or the model of the other institution may be adopted, provided that it includes all the conditions in Annex 4.

## 5. Doctoral Thesis

### 5.1 Structure of Doctoral Thesis and Abstract

#### Article 21

- 1) SD-ETTI publishes on its webpage ([www.sdetti.upb.ro](http://www.sdetti.upb.ro)) the following information:
  - a) A thesis writing guide.
  - b) Thesis templates both in Word and Latex.
  - c) The procedure of thesis defence.
  - d) The list of documents necessary for public defence.

#### Article 22

- 1) The doctoral thesis must be the result of the Advanced Training Program (PPA) and the Scientific Research Program (PCS). The content of the thesis must:
  - a) Prove the scientific knowledge of the approached topic.
  - b) Bring original contributions to the developing and solution of the topic
  - c) Propose and test new methods to validate the obtained results.
- 2) The Doctoral Thesis can be written in Romanian, English or in any other language of international circulation.
- 3) The form in which the doctoral thesis is written must comply with the model in Annex 5, which is an integral part of this regulation.
- 4) The doctoral student will also elaborate an abstract of the doctoral thesis, consisting of maximum 30 pages. The abstract must respect the structure of the thesis and must be drafted according to the model in Annex 6, which is an integral part of this regulation. The abstract must be written in Romanian and English or in any other language of international circulation.
- 5) The abstract is sent to specialists in the field, from the country and abroad, for assessments and opinions necessary to validate the original results of the thesis.
- 6) The assessments and opinions, expressed in writing and signed by specialists, must be sent to the SD-ETTI secretariat to be presented during the public defence of the thesis. The assessments and opinions sent have an advisory role.





### Article 23

- 1) The doctoral thesis must highlight, in the chapter comprising the conclusions, the original contributions of the doctoral student and in correlation, the published works of the doctoral student where these contributions have been included.
- 2) Any ideas or materials taken from other papers must be properly mentioned by the doctoral student by references in the text of the thesis to the bibliographic entries from the end of the thesis.
- 3) The author of the doctoral thesis assumes the correctness of the data, methods and demonstrations presented in the thesis.
- 4) The doctoral supervisor is responsible, together with the doctoral student, for the adherence to the quality and professional ethics standards, including the assurance of the originality of the content, according to the legal provisions.
- 5) CSD analyzes the received notifications regarding the violation of the norms of ethics and deontology in research, in connection with the content of the doctoral thesis and signals to IOSUD and to the Ethics Commission of UPB the possible irregularities.
- 6) The doctoral thesis and the annexes are public documents, which are drafted and kept both in printed and digital form.
- 7) The doctoral thesis is tested from the point of view of the similarities with other works (plagiarism) using the dedicated program made available to all doctoral supervisors by IOSUD - UPB.
- 8) The doctoral thesis is subject to intellectual property laws. The doctoral thesis can be fully published only with the consent of the CSD. Agreements with third parties regarding the publication may not reasonless delay or restrict the publication of the results of the thesis. SD-ETTI has the right to send the abstract or copies of the thesis to the interested institutions. SD-ETTI has the right to make public the electronic version of the thesis and to archive it, if this is not forbidden by the doctoral student or does not contravene the rights of a third party, in which case the thesis is assigned a copyright protection license.
- 9) The rights of the doctoral student to inventions made during the doctoral program are recognized under the conditions provided by law. UPB may negotiate percentages of revenues from patents.

### Article 24

- 1) When writing the doctoral thesis, the re-use of the information already existing in the specialized literature must be done with the correct citation of the sources:
  - a) All external sources used must be mentioned and cited accordingly.
  - b) Direct citation: identical imported text (verbatim) from another source is placed in quotation marks, ending with an indication of the source where it comes from.



- c) Paraphrasing or summary: if information from other sources, such as ideas, processes, arguments, conclusions, etc. is rephrased or summarized, this is done by mentioning the source where they come from.
  - d) Data, results, information, graphs, tables: the original source must be mentioned each time such information is referenced, adapted, or reused from other sources.
  - e) Self-citation: the re-use of information previously published by the author must be done with the appropriate citation of the source.
- 2) One considers as plagiarism:
- a) The process of assimilating or representing as personal the intellectual results of others, for example written documents or creative results including published or unpublished materials, data, research proposals, computer programs.
  - b) Copying identically (verbatim) or almost identically scientific results/materials made by other people.
  - c) Paraphrasing parts of materials belonging to other people without citing the source.
  - d) Copying elements from materials made by others, such as copying equations, tables, graphs, illustrations, presentations, photographs that are not public or cannot be freely used, without citing sources.
  - e) Identical or almost identical copying of materials or passages belonging to another person with incorrect citation of the source.
- 3) One considers as self-plagiarism:
- a) Identical (verbatim) or almost identical replication of a significant portion of the materials or personal results already published, without citing the source.
  - b) Self-plagiarism does not apply to publications based on materials already published by the author unless a clear reference is made to their use in the new material.
- 4) Inadequate source crediting is not accepted. This refers to the inadequate or incorrect crediting of a source of another author, such as mentioning, as authors, persons who did not contribute to the achievement of those intellectual results or the omission of authors who contributed to the design and creation of materials without their consent or against their will.
- 5) Falsification and content manufacturing are not accepted.
- a) Content counterfeiting occurs when a person or group provides for publication or distribution materials whose content is known or explicitly known to be false or untrue at the time of publication.
  - b) Content counterfeiting is the manufacture or the irrelevant use of other materials that are the intellectual creation of others.



- c) Content counterfeiting represents the use of manipulated, adjusted or artificially generated data without explicitly mentioning these aspects leading to the false representation of the results.
- d) Content counterfeiting is the use of artificially manipulated or synthesized results as real, without mentioning these aspects.
- e) Content counterfeiting represents the use of presentations, discoveries or statements that are known to be false but are presented in such a way as to appear real.

### **Article 25**

- 1) SD-ETTI and CSUD, in case of final decisions of CNATDCU to withdraw the title of doctor as a result of plagiarism notifications, undertake the measures provided by law.
- 2) In these situations, SD-ETTI also takes the following specific measures:
  - a) Suspension of the right to admit new doctoral students for a period of 3 years of the doctoral supervisor who coordinated a doctoral thesis with a final decision to withdraw the doctoral degree for plagiarism.
  - b) Exclusion from the SD-ETTI of the doctoral supervisor who coordinated two or more doctoral theses which have received as final decision the withdrawal of the doctoral degree for plagiarism.
  - c) Scientific referees who have been part of the public defence committees of two or more doctoral theses penalized with a final decision to withdraw the doctoral degree for plagiarism will no longer be appointed to the public defence committees of doctoral theses for a period of at least 3 years.
  - d) The doctoral student, author of a doctoral thesis penalized with a final decision to withdraw the doctoral degree for plagiarism will no longer have the right to enroll in a new cycle of doctoral studies within SD-ETT.

## **5.2 Doctoral Committee**

### **Article 26**

- 1) The doctoral thesis is evaluated by a doctoral committee / examining board.
- 2) The committee is proposed by the doctoral supervisor, then it is endorsed by CSD and CSUD and approved by the UPB Senate.
- 3) The committee comprises at least 5 members:
  - a) The president, as the representative of IOSUD-UPB.
  - b) The doctoral supervisor(s).
  - c) At least 3 official referees, from the country or from abroad, specialists in the field in which the doctoral thesis was elaborated, selected in such a way that only one is from UPB and as a rule, at least one from the universities from the consortium „ARUT” (except for the special cases approved by the CSD), and



the others to be, either from other higher education institutions, national research institutes or their branches, or from universities abroad. Universities abroad must be selected from the list contained in the Order of Minister of National Education.

- 4) The members of the doctoral commission must have the title of doctor and at least the didactic function of associate professor or that of scientific researcher degree II, or the quality of doctoral supervisor, in the country or abroad.
- 5) A member of the doctoral committee is in a conflict of interests situation if:
  - a) The member is a spouse, in-law-relative or relative up to the second degree, including the person whose folder is being evaluated, including the doctoral supervisor, as the case may be.
  - b) The member has benefited in the last 3 years prior to the evaluation or currently benefits of any nature from the evaluated person, including the doctoral supervisor, as the case may be. These situations do not include occasional collaborations with the IOSUD in question, such as participation in doctoral or habilitation commissions, other than those under the direct analysis of CNATDCU.
- 6) In the case of co-supervised doctorates, the doctoral committee must include representatives of both IOSUDs and be supplemented with two referees from other higher education institutions.
- 7) After the approval of the commission, the CSD sends the doctoral thesis to the members of the committee, together with their official appointment.
- 8) The submission of the thesis to the doctoral committee can take place only after the doctoral supervisor and the guidance committee have given their consent and the thesis has been defended before the guidance committee.
- 9) The official referees have the obligation to submit the analysis reports to the SD-ETTI secretary office within maximum 30 days from the receipt of the doctoral thesis.
- 10) If, after the approval of the doctoral committee, the chairman of the committee or one of the official referees becomes unavailable, the CSUD director may approve, at the proposal of the doctoral supervisor / principal doctoral supervisor and with the approval of the director of the doctoral school, the change of that member of the doctoral commission.



## 5.3 Public Defence

### Article 27

- 1) The public defense of the thesis can take place only after completing the preliminary stages described in Annex 7 (according to Art. 36 of the IOSUD - UPB Regulation).
- 2) In order to publicly defend the doctoral thesis, the doctoral student prepares a folder with the documents listed in Annex 8 (according to Art. 37 of the IOSUD - UPB Regulation).

### Article 28

- 1) The doctoral thesis is defended in a public meeting, in front of the Doctoral Committee / Examining Board. The meeting is chaired by the chairman of the doctoral committee and includes:
  - a) Presentation of the content of the doctoral thesis by the doctoral student.
  - b) The debate of the doctoral thesis, in which the members of the doctoral commission and the public ask questions to the doctoral student.
  - c) Reading of evaluation reports prepared by the doctoral supervisor(s) and other official referees.
- 2) The debate of the doctoral thesis is mandatory and is recorded in the minutes of the meeting. This should be the central point of the public defense of the doctoral thesis, with the aim of highlighting the knowledge of the doctoral student in the field of the approached topic and the elements of originality contained in the thesis.
- 3) The presentation of the thesis before the doctoral committee takes a maximum of 40 minutes.
- 4) The defense of the doctoral thesis can be done in Romanian or English.
- 5) It is mandatory that the President of the doctoral committee, the doctoral supervisor(s) and at least 2 official referees be present at the public defense of the doctoral thesis.
- 6) An official referee, who cannot participate in the public defense of the doctoral thesis, must send to the Doctoral Bureau, before the public defense meeting of the thesis, a written statement, in which he communicates the reason for not participating in the public defense of the doctoral thesis and sends the report evaluation and the grade he gives to the doctoral thesis.
- 7) Theses containing patented results are the exception and are presented without publicity, before a commission whose members have signed confidentiality agreements until the publication of the patent.
- 8) In order to inform the scientific community about the doctoral thesis, which is to be publicly defended, the SD-ETTI secretariat will ensure:



- a) Publication on the SD-ETTI website, at least 20 days before, of the abstract, the room, the date and time of the thesis's public defence.
- b) Access to the printed version of the thesis and abstract, to the SD-ETTI headquarters, as well as to its electronic version, in accordance with the law.

## Article 29

- 1) Following the defense of the doctoral thesis and the reports of the official referees, the doctoral committee deliberates on the grade to be assigned to the thesis. Each member of the doctoral committee awards a grade. The following grades can be assigned:

- a) „Excellent”,
- b) „Very Good”,
- c) „Good”,
- d) „Satisfactory”
- e) „Unsatisfactory”,

by taking into account the minimum standards set out below. The grade that gathered the absolute majority of the votes cast by the members of the commission becomes the decision of the entire commission. In the minutes of the meeting of defense of the doctoral thesis, not only the grade established by the committee following the vote is recorded, but also the one given by each member of the doctoral committee.

- 2) In assigning the grade of the doctoral thesis, SD-ETTI adopts the following quantitative criteria regarding the minimum number of scientific papers published by the doctoral student. The criteria are correlated with those established by CNATDCU:

- a) For "Excellent", at least 6 papers published on the topic of the thesis in journals or conferences indexed BDI, of which:
  - i) At least one paper published in a WOS indexed journal from Q1 - Q2 as first author.
  - ii) At least one paper published in a WOS indexed journal or at least 2 papers in WOS indexed journals or conference volumes.
  - iii) Be the first author of at least 4 published works, of which at least one is WOS indexed.
  - iv) One and only one of the 6 required papers can be assimilated to a national patent registered at OSIM in the subject of the thesis. A WOS indexed paper can be assimilated to a patent registered with WIPO, EPO, USPTO or JPO in the subject of the thesis. A paper published in a WOS indexed journal from Q1 - Q2 can be assimilated with a dyadic patent (registered with at least two of the EPO, USPTO or JPO), in the subject of the thesis.





- v) Papers published in WOS indexed journals can be considered on the basis of the journal's acceptance of publication.
- b) For "Very good", at least 5 papers published on the topic of the thesis in journals or conferences indexed BDI, of which:
  - i) At least one paper published in a WOS indexed journal from Q1 - Q3 as first author.
  - ii) At least one paper published in a WOS indexed journal or at least 2 papers published in WOS indexed journals or conference volumes.
  - iii) Be the first author of at least 3 published works, of which at least one is WOS indexed.
  - iv) One and only one of the 5 required papers can be assimilated to a national patent registered at OSIM in the subject of the thesis. A WOS indexed paper can be assimilated to a patent registered at WIPO, EPO, USPTO or JPO, in the subject of the thesis. A paper published in an indexed journal WOS Q1 - Q3 can be assimilated with a dyadic patent (registered with at least two of the EPO, USPTO or JPO), in the subject of the thesis.
  - v) Papers published in WOS indexed journals can be considered on the basis of the journal's acceptance of publication.
- c) For "Good", at least 4 papers published on the topic of the thesis in journals or conferences indexed BDI, of which:
  - i) Minimum 2 papers published in WOS indexed journals or minimum 3 papers in WOS indexed journals or conference volumes.
  - ii) Be the first author of at least 2 published works, of which at least one is WOS indexed.
  - iii) One and only one of the 4 necessary papers can be assimilated to a national patent registered at OSIM in the subject of the thesis. A WOS indexed work can be assimilated to a patent registered at WIPO, EPO, USPTO or JPO, in the subject of the thesis.
  - iv) Papers published in WOS indexed journals can be considered on the basis of the journal's acceptance of publication.
- d) For "Satisfactory", at least 4 papers published on the topic of the thesis in journals or conferences indexed BDI, of which:
  - i) At least one paper published in a WOS indexed journal or at least 2 papers in WOS indexed journals or conference volumes.
  - ii) To be the first author of at least 2 published works.
  - iii) One and only one of the 4 necessary papers can be assimilated to a national patent registered at OSIM in the subject of the thesis. A WOS indexed work can be assimilated to a patent registered at WIPO, EPO, USPTO or JPO, in the subject of the thesis.



- iv) Papers published in WOS indexed journals can be considered on the basis of the journal's acceptance of publication.
- 3) In addition to the quantitative criteria mentioned above, each member of the doctoral committee must take into account in the evaluation the following qualitative criteria:
  - a) The scientific relevance.
  - b) The potential impact of the results and the extent to which the thesis makes substantial contributions to knowledge.
  - c) Originality and innovative or creative character and the extent to which the doctoral student demonstrates independent critical thinking skills.
  - d) The extent to which the doctoral student has used research methods and methodologies appropriately.
  - e) The extent to which the presentation of the information in the thesis is appropriate.
  - f) The extent to which the doctoral student demonstrates an understanding of and familiarity with the relevant literature in the field.
  - g) The extent to which the results presented in the thesis have been published or accepted for publication, following evaluation by external evaluators (by peer review), or are the basis of patent requests or applications or the extent to which the results presented in the thesis have the potential to be published in this way or to be applied.
  - h) Compliance with the norms of good conduct in the research-development activity.
  - i) Compliance with professional ethics standards, including the existence of plagiarism, in the thesis and / or related activities.
- 4) The president of the committee will express the point of view of SD-ETTI in awarding the grade.
- 5) In case of assigning the grade "Unsatisfactory", the doctoral commission specifies the content elements to be redone or completed in the doctoral thesis and requests a new public defence of the thesis.
- 6) The second defence of the thesis takes place before the same doctoral commission within a term established by the commission. If the grade "Unsatisfactory" is obtained also at the second defence, the doctoral title is not granted, and the doctoral student is expelled.
- 7) If a member of the doctoral committee identifies, following the evaluation of the thesis or during public defense, irregularities such as: plagiarism of the results of other authors, preparation of results or replacement of results with fictitious data (as defined in Art. 24 of this Regulation), it shall take the following measures:
  - a) Notifies the Ethics Committee of UPB in order to analyze and solve the case, including by expelling the doctoral student, according to art. 306-310 and 318-





- 322 of the National Education Law no. 1/2011 and the provisions of Law no. 206/2004 on good conduct in scientific research, technological development and innovation, with subsequent amendments and completions.
- b) Communicates the deviations to all the members of the Doctoral Committee and proposes the awarding of the grade "Unsatisfactory".
  - 8) The doctoral thesis, the reports and the assessments of the members of the Committee are sent to IOSUD - UPB.
  - 9) The PhD title is awarded by Order of the Minister of Education, after the validation of the doctoral thesis by CNATDCU.
  - 10) If UPB receives from the Ministry of Education, an order not to grant the PhD degree with a motivation to invalidate the doctoral thesis, CSD requests the doctoral student and the doctoral supervisor to improve the thesis and redo the work.
  - 11) One can make an appeal against the order not to grant the doctoral title, as well as against the decision to invalidate the thesis / to complete the application file, within 15 working days from the date of their communication to IOSUD. The appeal is officially registered at the Ministry of Education.
  - 12) The doctoral thesis which has received the decision for invalidation / completing the application file can be retransmitted to CNATDCU, through the Doctorate Office, within one year from the date of the first invalidation / request for completion. If the doctoral thesis is invalidated a second time, the doctoral degree will not be granted, and the doctoral student will be expelled.
  - 13) After defending the doctoral thesis, a certificate attesting the period in which the doctoral student followed the doctoral studies can be issued, at the request of the graduate.

## 5.4 PhD Title

### Article 30

- 1) The PhD title is awarded by order of the Minister of Education after the validation of the doctoral thesis by CNATDCU.
- 2) Based on the Ministry order, UPB awards the diploma and the title of Doctor of Science, in the specialty of Electronic Engineering, Telecommunications and Information Technology.
- 3) The doctoral diploma will include the grade obtained by the doctoral student, respectively "Excellent", "Very good", "Good" or "Satisfactory". The doctoral diploma will also include a mention in Latin, as follows:
  - a) For "Excellent", the statement "Summa cum laudae".
  - b) For "Very good", the statement "Magna cum laudae".
  - c) For "Good", the statement "Cum laudae".



### **Article 31**

- 1) The public access to the doctoral thesis is regulated by CNATDCU. The procedure by which the thesis is made public is described in Annex 9 (according to Art. 35 of the IOSUD - UPB Regulation).

## **6. Doctoral Students**

### **Article 32**

- 1) During the period of their doctoral studies, a registered person has the quality of "student".
- 2) The doctoral student is assimilated to a research assistant or, as the case may be, to a university assistant with a fixed-term employment contract.
- 3) The doctoral student is enrolled in a single Doctoral School within IOSUD - UPB.

### **6.1 Guiding of Doctoral Students**

#### **Article 33**

- 1) During the entire period of doctoral studies, the doctoral student is guided by the doctoral supervisor of the doctoral program and a Steering Committee.
- 2) During the thesis, the doctoral supervisor may be changed under the conditions provided by Art. 21 of the IOSUD - UPB Regulation.
- 3) The Steering Committee is composed of members of the doctoral supervisor's research team, other SD-ETTI affiliates, or non-affiliated teachers and researchers. All members of the Steering Committee must possess a doctoral degree.
- 4) The composition of the Steering Committee is established by the doctoral supervisor after consultation with the doctoral student and is validated by the CSD.
- 5) The activity of the Steering Committee aims at:
  - a) To stimulate the progress of the thesis, by creating an adequate scientific environment and by systematic control.
  - b) To prepare future doctoral supervisors.
- 6) The Steering Committee establishes together with the doctoral supervisor:
  - a) The structure, content, organization, and development of the PCS.
  - b) Assists the doctoral student during the entire doctoral program.
  - c) Guides the doctoral student in the activity of dissemination and publication of the original results.
  - d) Analyzes, evaluates and approves the semester research reports and the doctoral thesis.



- 7) SD-ETTI has the mission to support in all aspects the professional relationship between the supervisor and the doctoral student.
- 8) Conflicts between the doctoral student and the doctoral supervisor are mediated by the CSD, and in case the conflict is not resolved at this level, it will be carefully examined by IOSUD - UPB and the Ethics Commission of UPB.
- 9) The doctoral supervisor and the Steering Committee have the obligation to inform the doctoral student on the rules of scientific ethics, professional and university research and to verify their observance.
- 10) The CSD takes measures to prevent and sanction deviations from the norms of scientific, professional and university ethics.
- 11) In case of possible academic frauds, violations of university ethics, or deviations from their good conduct (including plagiarism), the doctoral student and / or the doctoral supervisor are liable under the law.
- 12) SD-ETTI informs doctoral students about the possibilities of continuing their studies through post-doctoral programs, after obtaining the doctoral degree, and guides them in the necessary steps to obtain post-doctoral scholarships.

## 6.2 Rights and Obligations of the Doctoral Student

### Article 34

- 1) The rights of doctoral students during the period of their doctoral study studies are:
  - a) To benefit from the support, guidance and coordination of the doctoral supervisor and the Steering Committee.
  - b) To register and participate in courses, seminars or workshops, organized for doctoral studies in SD-ETTI and in the Faculty of Electronics, Telecommunications and Information Technology.
  - c) To enroll in courses and seminars organized by other doctoral schools.
  - d) To be represented in the CSD.
  - e) To benefit from the research infrastructure, documentation centers, libraries and equipment of SD-ETTI and of the departments and research centers, from the Faculty of Electronics, Telecommunications and Information Technology and from UPB, for the realization of the doctoral degree.
  - f) To work for experiments, characterizations and simulations, on professional equipment from research institutes and profile companies, which have concluded agreements or partnerships with SD-ETTI.
  - g) To benefit from national or international mobilities.
  - h) To benefit from institutional support, within the limit of the financing allocated to doctoral studies, in order to participate in scientific conferences, training schools and national and international seminars in the field of specialization of the doctoral thesis.



- i) To be informed about the evaluation criteria, the doctoral study program, the results of the exams and verifications of the research reports during the period of their doctoral studies.
- j) To carry out teaching activities, according to the doctoral studies contract, within the limit of 4-6 teaching hours per week, having the right to remuneration in case of exceeding this norm.
- k) To request the recognition of previous research internships, exams, reports and scientific papers.
- l) To initiate and participate in other research contracts, ensuring external sources of funding.
- m) To interrupt or prolong the duration of studies, according to Art. 12 of the present directive.
- n) To request, based on well-founded reasons, the change of the doctoral supervisor, according to Art. 38, par. (7) of the present directive.
- o) To participate, within the scientific research program, in projects and / or scientific collaboration contracts coordinated by the doctoral supervisor.
- p) Throughout the period of the doctoral degree, in accordance to its student quality, the doctoral student benefits from free medical assistance, without the need of paying contributions to state social insurance, unemployment insurance, social health insurance and for free medical assistance in case of accidents at work and occupational diseases. The period of the doctoral studies is recognized as seniority in work.

### **Article 35**

- 1) The doctoral student has the following obligations:
  - a) To respect the frequency conditions and the work schedule, established by the doctoral studies program.
  - b) To take the exams, to write and present the research reports, according to the doctoral studies contract.
  - c) To write and publicly defend the doctoral thesis.
  - d) To capitalize on the original research carried out within the doctoral study program by publishing articles and by scientific or patent communications. The set of minimum performance criteria is established in accordance with Art. 29, par. (2) of the present Regulation and the specific norms elaborated by the specialized commissions of CNATDCU.
  - e) To be in constant contact with the doctoral supervisor and the Steering Committee.
  - f) To participate in scientific seminars and symposia organized by SD-ETTI.
  - g) To respect academic conduct and institutional discipline.



- h) To answer, in accordance with the law, in case of academic fraud, violation of university ethics or other deviations from good conduct in scientific research, including plagiarism.

### Article 36

- 1) A doctoral student can be expelled from doctoral studies in the following situations:
  - a) If the doctoral student, who fails to complete the thesis within the term established according to the doctoral studies contract and any additional documents to it, also exceeds the grace period.
  - b) If the grade "Unsatisfactory" is obtained again at a second public defense of the doctoral thesis.
  - c) If the doctoral thesis is invalidated a second time by CNATDCU.
  - d) If the doctoral student has not signed its study contract.
  - e) If, at the end of the academic year, the doctoral student has not paid the tuition fees, within the established deadlines.
  - f) If the doctoral student has been proposed for expulsion, as a sanction for fraud in professional activity or for serious deviations from university discipline and ethics, according to the provisions of the Code of Ethics and University Deontology.
  - g) If the doctoral student has withdrawn from its studies.
  - h) If the doctoral student has not submitted the request to return to studies and finish its doctoral training.
  - i) If the doctoral student has not submitted the research reports within the stipulated deadlines.
  - j) At the request of the doctoral supervisor, with the approval of the CSD and the approval of the CSUD, for non-fulfillment of the obligations deriving from the present regulation and the doctoral studies contract.
  - k) Other situations arising from this Regulation, referred to in the corresponding Articles.
- 2) The expulsion procedure is initiated at the proposal of the doctoral supervisor or the Director of SD-ETTI, is approved by CSUD and is finalized by the Rector's Decision.
- 3) The expulsion decision is communicated to the doctoral student or his / her legal representative by the SD-ETTI secretary office.
- 4) The doctoral student expelled by the provisions of the Code of Ethics and University Deontology can no longer be admitted to doctoral studies at SD-ETTI.
- 5) At the date of the expulsion decision, the current doctoral university contract (of the expelled student) expires.



## 6.3 Mobility Opportunities for Doctoral Students

### Article 37

- 1) SD-ETTI can provide financial support to doctoral students for conducting research internships in the country and abroad, with the consent of the doctoral supervisor.
- 2) Doctoral students are supported to travel for experiments, characterizations and simulations necessary to complete the doctoral program, to research institutes and / or industrial companies that have professional equipment and specialized software.
- 3) SD-ETTI can provide financial support to doctoral students for participation in prestigious conferences in the country or abroad, where they have papers accepted for presentation.

## 7. Doctoral Supervisors

### 7.1 Doctoral Supervisor Status

#### Article 38

- 1) Professor or researchers who obtained the right to coordinate doctoral theses before the entry into force of LEN no. 1/2011, as well as the persons who acquire this right according to the current laws, can be doctoral supervisors at SD-ETTI.
- 2) Doctoral supervisors at SD-ETTI must have a contractual relationship with IOSUD - UPB and be members of this doctoral school.
- 3) The doctoral supervisor is affiliated only to SD-ETTI, in other doctoral schools he can only have co-supervision.
- 4) A doctoral supervisor at SD-ETTI can only guide doctoral students in the field of Electronic Engineering, Telecommunications and Information Technology.
- 5) It is recommended that the number of doctoral students financed from the state budget that can be led simultaneously by a doctoral supervisor be between 2 and 12.
- 6) In the case of a co-supervised doctorate, a doctoral supervisor from SD-ETTI may conduct doctorates in a field other than Electronic Engineering, Telecommunications and Information Technology, if the topic of the thesis is transdisciplinary.
- 7) The CSD may decide to change the doctoral supervisor and appoint another doctoral supervisor under the following conditions (according to Art. 21 of the IOSUD - UPB Regulation):
  - a) The doctoral supervisor is retiring and does not want to continue the doctoral management activity.



- b) At the request of the doctoral supervisor, motivated by the impossibility to continue the guidance activity of the doctoral student.
  - c) At the request of the Director of SD-ETTI Doctoral School, in case of finding the unavailability of the doctoral supervisor.
  - d) At the motivated request of the doctoral student, for other reasons related to the guidance relationship between the doctoral supervisor and the doctoral student.
  - e) At the joint request of the doctoral student and the doctoral supervisor.
- 8) The new doctoral supervisor can be proposed by the CSD or by the doctoral student.
  - 9) The change of the doctoral supervisor is approved by the CSUD Director, only with the written consent of the new doctoral supervisor and the doctoral student.
  - 10) The new doctoral supervisor enters his rights following the signing, together with the doctoral student, of a new contract for doctoral studies.

## 7.2 Rights and Obligations of the Doctoral Supervisor

### Article 39

- 1) The rights and obligations of the doctoral supervisor derive from National Law 1/2011, from HG 681/2011 and from the present Regulation.
- 2) The rights of the doctoral supervisor during the guidance of doctoral study programs are:
  - a) To participate in competitions for doctoral grants.
  - b) To request the CSD to organize an admission contest for each vacant doctoral student position.
  - c) To have the right of veto in the selection of the doctoral candidate for filling a vacancy.
  - d) To guide and evaluate the activity of the doctoral student within the doctoral university study program, according to the professional and university autonomy, in accordance with the doctoral university study program and respecting the professional interests of the doctoral student.
  - e) To establish the Advanced Training Program (PPA) and the Scientific Research Program (PCS) for the doctoral students under its guidance, in compliance with the provisions of this regulation and the legislation in force.
  - f) To use in the doctoral, didactic or research activity the results obtained by the doctoral student, under his / her coordination, during the doctoral studies.
  - g) To refuse the guidance of a doctoral student in the conditions in which he is put in a conflict of interests.
  - h) To request the CSD to interrupt the guidance relationship with a doctoral student in case his / her activity is inappropriate.





- i) To propose the commission members to form the Doctoral Committee / Examining Board of the doctoral thesis.
- j) To have an impartial internal and external evaluation, according to the specific methodology of the evaluation process.
- k) To know the methodology in relation to which it is evaluated, both in the internal evaluation and in the external evaluation.
- l) To know the results of the internal and external evaluation of one's own activity.

#### **Article 40**

- 1) The doctoral supervisor has the following obligations:
  - a) To ensure the scientific, professional, ethical and deontological guidance of each doctoral student.
  - b) To propose or validate research topics for each doctoral student.
  - c) To ensure transparent guidance and evaluation criteria.
  - d) To coordinate the activity of doctoral students for the entire period of doctoral studies, following the timely completion of the preparation stages.
  - e) To ensure the right conditions for carrying out all the activities included in the doctoral study programs.
  - f) To organize and monitor the internships and trainings of the doctoral students at research institutes and industrial companies in the country and abroad.
  - g) To stimulate and follow the participation of the doctoral student, during the cycle of doctoral studies, in prestigious international conferences, workshops, seminars or courses.
  - h) To support the mobility of doctoral students at prestigious universities in the country and abroad.
  - i) To coordinate the elaboration by the doctoral student of articles for prestigious journals and conferences.
  - j) To analyze the doctoral thesis and to write an evaluation report.
  - k) To carry out together with the doctoral student the similarity test (plagiarism) for the doctoral thesis and the afferent abstracts, using the program provided by IOSUD - UPB.
  - l) To avoid any conflict of interest in the acceptance and guidance of doctoral students.
  - m) To actively contribute to the development and maintenance of collaboration agreements and partnerships with universities, research institutes and specialized industrial companies in the country and abroad.
  - n) To approve the requests for interruption and extension of doctoral studies.
  - o) To provide the necessary information for the evaluation of the doctoral school and the participation in the national competition of doctoral grants.
  - p) To respect the Code of Ethics and University Deontology of UPB.





## 8. Funding of Doctoral University Studies

### Article 41

- 1) SD-ETTI is financed from the budget and from its own revenues from research contracts and collaboration agreements.
- 2) Doctoral studies are full-time and part-time and are funded by: doctoral grants, research and development projects supported from public / private sources or fees.
- 3) SD-ETTI participates, through UPB, in the national competition for doctoral grants, according to the legislation in force.
- 4) The doctoral supervisor, with the approval of SD-ETTI, may propose the extension of the doctoral grant, in accordance with the law.
- 5) The payment and the rights of the doctoral student from the doctoral grants are made in accordance with the legal provisions.
- 6) Doctoral students can also be remunerated from:
  - a) National or international projects in which they are involved for the development of the doctoral program.
  - b) Research projects concluded with research institutes and / or specialized industrial companies where doctoral students carry out activities related to the subject of the doctoral thesis.
- 7) SD-ETTI and / or the doctoral supervisor must use the doctoral grant funds only for the activities of the doctoral studies program related to the positions of doctoral students for which they have been allocated.
- 8) The normalization and remuneration of the didactic activities in the state of functions is done according to the legislation in force.

## 9. Quality of Doctoral University Studies

### Article 42

- 1) SD-ETTI periodically self-evaluates at dates established by CSUD according to a procedure developed by IOSUD - UPB, according to the following aspects:
  - a) The mission and objectives of the doctoral university studies program.
  - b) Content and curriculum of the doctoral university studies program.
  - c) The research results undertaken by the doctoral students and their doctoral supervisors, materialized through publications, patents, participation in scientific events.
  - d) Presentation of results of the research activity of doctoral students.
  - e) Cooperation relations with other institutions.
  - f) Specific requirements of different teaching methods and forms of conduct.



- g) The existence of the means of documentation, learning and research, as well as of the logistics that the doctoral students benefit from.
  - h) The staff involved in the development of the doctoral studies program.
  - i) Ways to assess knowledge and test the skills of doctoral students, as well as track progress during training.
  - j) The degree of involvement of doctoral students in ensuring the quality of the doctoral studies program.
  - k) Existence of a code of ethics with clear provisions on the definition and sanctioning of various academic and professional frauds, including plagiarism.
  - l) Fulfilling the specific requirements of the external evaluation indicators of the doctoral studies programs.
- 2) Internal quality assessment procedures will be based on several sources of information, including assessment by doctoral students, obtained through anonymous questionnaires, subject to the information confidentiality provided and statistically processed.
  - 3) Based on the results of the annual internal evaluations, SD-ETTI will review, modify and adapt the structure of doctoral studies programs.
  - 4) SD-ETTI is subject to periodic external evaluation at 5-year intervals. The external evaluation is done by ARACIS or by another quality assurance agency, from the country or abroad. It is based on a system of criteria and a methodology established by the Order of the Minister of Education.
  - 5) The activity evaluation of doctoral students is carried out periodically through criteria established by CSD and IOSUD and with ensuring a maximum transparency, bringing to the knowledge of doctoral students the grades awarded. It aims to:
    - a) results, such as publications, participation in conferences, patents, as well as their quality, estimated by integrating publications into the international flow, citations, awards, etc.,
    - b) the competencies the doctoral student must develop within the doctoral studies program,
    - c) observance of scientific, professional and university ethics.
  - 6) SD-ETTI evaluates at 5-year intervals the activity of its doctoral supervisors, based on procedures developed by CSUD according to Art. 50 of the IOSUD - UPB Regulation.
  - 7) This internal evaluation of the titular doctoral supervisors will take into account especially the quality of the results obtained by them in the research and in the management of the doctoral students, such as:
    - a) The scientific research results of the doctoral supervisor (publications, patents and other ways of capitalizing on his / her own research activity).



- b) The scientific research results of the doctoral students supervised by this doctoral supervisor (publications, patents and other ways of capitalizing on the research activity of the doctoral students).
  - c) Other indicators of the scientific activity of the doctoral supervisor (participation in research projects, participation in national and international conferences, membership in professional organizations).
  - d) Other indicators of the scientific activity of the supervised doctoral students (participation in research projects, participation in national and international conferences, membership in professional organizations).
- 8) Once every 5 years, doctoral supervisors are subject to an external evaluation based on procedures established, at the proposal of CNATDCU, by Order of the Minister of Education. The results of this evaluation are public. A basic criterion is the fulfillment of the CNATDCU criteria.
  - 9) Following internal or external evaluations, it is decided to extend or withdraw the right of a doctoral supervisor to conduct doctorates within SD-ETTI. The extension proposal or withdrawal is made by the CSD and is approved by universal suffrage in the General Assembly of SD-ETTI.
  - 10) Withdrawal of the right to conduct within SD-ETTI is decided for non-compliance with the obligations of doctoral supervisors (Art. 40 of this Regulation) or failure to meet the criteria of internal or external evaluation.

## 10. Final Provisions

### Article 43

- 1) This Regulation shall enter into force on the date of its adoption by the CSUD on 29-01-2021.
- 2) Reaching the maximum number of doctoral students imposed by this regulation for a doctoral supervisor is achieved gradually, by completing the doctoral university studies program of doctoral students under the coordination of doctoral supervisors.
- 3) The SD-ETTI regulation is endorsed by universal suffrage, of the absolute majority of the doctoral supervisors members of SD-ETTI and is approved by CSUD.
- 4) This regulation may be amended or updated in consultation with all doctoral supervisors who are members of SD-ETTI.



## Annex 1 Doctoral Studies Contract Template



Ministerul Educației / Ministry of Education  
Universitatea POLITEHNICA din București / University POLITEHNICA of Bucharest  
Splaiul Independenței nr. 313, 060042 București, Romania  
www.upb.ro

Școala doctorală ..... \*.....\* /

Doctoral School ..... \*.....\*

### **CONTRACTUL DE STUDII UNIVERSITARE DE DOCTORAT / THE CONTRACT ON DOCTORAL STUDIES**

**NR. .... / .....2020**

#### **Art. 1. Părțile contractante**

Universitatea POLITEHNICA din București (UPB), reprezentată prin Rector ....., ....., Școala Doctorală \*.....\* , reprezentată prin Director Prof.univ.dr.ing. ...., și Conducător de doctorat Prof.univ.dr.ing. ...., pe de o parte,

și D-I / D-na ....., posesor al Cărtii de identitate/ Pașaportului seria ....., nr. ...., CNP ....., student-doctorand la UPB, Școala doctorală \*.....\* , în sistem cu / fără taxă de studii, fără / cu bursă de studii, pe de altă parte,

au convenit să încheie prezentul contract, care conține obligațiile și drepturile părților asumate pe perioada studiilor universitare de doctorat.

#### **Art. 2. Obligațiile studentului-doctorand**

a) Să respecte Regulamentul privind organizarea și desfășurarea studiilor universitare de doctorat de la UPB și Regulamentul Școlii doctorale în care se înmatriculează și să îndeplinească integral activitățile universitare sau de cercetare stabilite de conducătorul de doctorat, conform reglementărilor legale în vigoare, inclusiv ale Senatului UPB și contractul de bursa doctorală - dacă există.

b) În cazul doctoratului cu taxă, să achite la începutul anului universitar taxa aferentă unui an de studii stabilită de Senatul UPB.

c) Să participe la cursuri și alte activități de pregătire stabilite de către conducătorul de doctorat, prevăzute în cadrul Programului de pregătire bazat pe studii universitare avansate, organizate de Școala doctorală proprie sau de

#### **Art. 1. The Contracting Parties**

The University POLITEHNICA of Bucharest (UPB), represented by the Rector ....., ....., the Doctoral School \*.....\* , represented by the Director Prof.univ.dr.ing. ...., and PhD Supervisor Prof.univ.dr.ing. ...., on one hand,

and Mr. / Ms ....., holder of the Identity Card / Passport series ....., no ....., the PNC ....., PhD Student at the UPB, Doctoral School \*.....\* , in a system with / without tuition fee, without / with scholarship, on the other hand,

have agreed to conclude this contract, which contains the obligations and rights of the parties undertaken during doctoral university studies.

#### **Art. 2. The obligations of the PhD Student**

a) To comply with the Regulation on organisation and unrolling of the doctoral university studies at the level of UPB, and with the Regulation of the Doctoral School where is registered, and meet all university or research activities laid down by the PhD Adviser, in accordance with the legal provisions, and including those of the UPB Senate and the contract of doctoral scholarship, if any.

b) In the case of the doctoral university studies with tuition fee, to pay the fees per year established by the UPB Senate, at the beginning of the academic year.

c) To participate at the courses and other training activities set out by the PhD Adviser, scheduled in the Program of training based on advanced university studies, provided by the



alte Școli doctorale.

d) Programul de studii universitare avansate include pe lângă cele minim 2 discipline de specialitate și 3 discipline obligatorii după cum urmează: Etică, Metodologia cercetării și Autorat științific, Managementul proiectelor.

e) Pentru validarea tezelor de doctorat și atribuirea titlului de doctor trebuie îndeplinite standardele minimale prevăzute de OMEN 5110/2018.

f) Să participe, în cadrul Programului de cercetare științifică, în proiecte științifice stabilite de către conducătorul de doctorat, în conformitate cu planul de pregătire.

g) Să întocmească și să susțină Rapoartele de activitate din cadrul Programului de cercetare științifică.

h) Să elaboreze, pe perioada de desfășurare a studiilor doctorale, sub coordonarea conducătorului de doctorat, lucrările științifice menționate în Regulamentul Școlii doctorale.

i) Să elaboreze și să susțină public Teza de doctorat în conformitate cu prevederile legale și în condițiile prevăzute de Regulamentul privind organizarea și desfășurarea studiilor universitare de doctorat de la UPB.

j) Să manifeste respect și să aibă o comportare civilizată în cadrul comunității universitare.

k) Să respecte standardele de calitate și de etică profesională.

l) Să răspundă în condițiile legii, în cazul unor fraude academice, al unor încălcări ale eticii universitare, al unor abateri de la buna conduită în cercetarea științifică, inclusiv al plagiatului.

### Art. 3. Drepturile studentului-doctorand

a) Să beneficieze de gratuitatea învățământului pentru numărul de locuri finanțate de la buget și pe durata studiilor universitare de doctorat prevăzută de lege.

b) Să beneficieze de sprijinul, îndrumarea și coordonarea conducătorului de doctorat, precum și a comisiei de îndrumare.

c) Să opteze, cu sprijinul și avizul conducătorului de doctorat, pentru realizarea unor activități din cadrul studiilor universitare avansate, organizate de Școala doctorală proprie sau de alte Școli doctorale.

d) Să folosească spațiile universității - săli de cursuri, laboratoare, săli de proiect sau de seminar, săli de lectură, biblioteci, baze sportive - și celelalte mijloace puse la dispoziție de universitate,

own Doctoral School or by other Doctoral Schools.

d) The Program of training based on advanced university studies includes, apart from the minimum two specialization disciplines, also the following compulsory three disciplines: Ethics, Methodology of research and authorship, Projects management.

e) For the validation of the PhD thesis and to award the PhD title, the minimal standards provided by the regulations from OMEN 5110/2018 should be fulfilled.

f) To participate, under the Program of scientific research, in scientific projects established by the PhD Adviser, according to the training plan.

g) To prepare, submit and support the Activity Reports of the Program of scientific research.

h) To develop, during the doctoral university studies, under the supervision of the PhD Adviser, the scientific papers mentioned in the Regulation of the Doctoral School.

i) To realize and publicly sustain the Doctoral thesis in accordance with the legal provisions and under the conditions laid down by the Regulation on organisation and unrolling of the doctoral university studies at UPB.

j) To show respect and have a civilized behavior within the academic community.

k) To meet the standards of quality and professional ethics.

l) To respond to the law, in the case of academic fraud, violations of academic ethics, the deviations of the conduct in scientific research, including plagiarism.

### Art. 3. The rights of the PhD Student

a) To take advantage of the studies free of charge for the number of places financed from the budget and for duration of the university doctoral studies provided by the law.

b) To take advantage of the support, guidance and coordination of the PhD Adviser, as well as of the mentoring commission.

c) To opt, with the support and accept of the PhD Adviser, for carrying out some activities in the framework of advanced university studies, organised by the own Doctoral School or by other Doctoral Schools.

d) To use university facilities - lecturing rooms, laboratories, design or seminar rooms, reading rooms, libraries, sportive base - and other





scopul și limitele tezei de doctorat.

e) Să beneficieze de sprijin instituțional pentru a participa la manifestări științifice naționale/ internaționale - conferințe, congrese, seminarii, ateliere de lucru, școli de vară / iarnă etc. - în domeniul de doctorat, în scopul și limitele tezei de doctorat.

f) Să participe la manifestările științifice – seminarii, conferințe etc. - organizate de Școala doctorală proprie sau de alte Școli doctorale.

g) Să participe la reuniunile de lucru ale structurilor de cercetare-dezvoltare din cadrul UPB.

h) Să lucreze împreună cu echipe de cercetători din cadrul UPB sau din cadrul unor unități de cercetare-dezvoltare care au încheiat acorduri sau parteneriate instituționale cu UPB.

i) Să fie reprezentat în forurile decizionale ale Școlii doctorale, potrivit prevederilor legale și ale Regulamentului de organizare și desfășurare a studiilor universitare de doctorat la UPB.

j) Să fie membru în asociații profesionale care să-l reprezinte și să îi susțină drepturile în mediul universitar și să solicite recunoașterea acestor drepturi de către universitate, în măsura în care aceste asociații nu încalcă prevederile regulamentelor UPB.

k) Să obțină burse în conformitate cu prevederile legale în vigoare, inclusiv ale Senatului UPB și ale Școlii doctorale.

#### **Art.4. Obligațiile conducătorului de doctorat**

a) Să coordoneze activitatea doctorandului pe întreaga perioadă de desfășurare a studiilor doctorale, urmărind finalizarea la timp a etapelor de pregătire a doctorandului, în condițiile de exigență ale UPB și la standardele cerute de Consiliul Național de Atestare a Titlurilor, Diplomelor și Certificatelor Universitare (CNATDCU).

b) Să propună temele de cercetare.

c) Să asigure participarea studentului-doctorand la Programul de pregătire bazat pe studii universitare avansate și alegerea elementelor de studiu din cadrul acestui program care trebuie urmate de către studentul-doctorand.

d) În cadrul Programului de cercetare științifică, să asigure participarea studentului-doctorand în proiecte științifice.

means made available by the university, in the scope and limitations of the doctoral thesis.

e) To take advantage of institutional support to attend national / international scientific events – conferences, congresses, seminars, workshops, summer / winter schools, in the doctoral field, in the scope and limitations of the doctoral thesis.

f) To participate in scientific events - seminars, conferences etc. - organised by the own Doctoral School or by other Doctoral Schools.

g) To attend working meetings of the research - development structures from UPB.

h) To work together with research teams of the UPB or of research - development units which have concluded agreements or institutional partnerships with UPB.

i) To be represented in decision - making fora of the Doctoral School, according to legal provisions and to Regulation on organisation and unrolling of the doctoral university studies at UPB.

j) To be member of professional associations representing him/ her and sustaining the rights in the academic environment, and to request recognition of these rights by the university, to the extent that these associations do not violate the regulations of UPB.

k) To obtain scholarships in accordance with the legal provisions in place, including those of the UPB Senate and of the Doctoral School.

#### **Art. 4. The obligations of the PhD Supervisor**

a) To coordinate PhD Student activity throughout the period of the doctoral studies, pursuing the completion at term of the preparation stages, under the exigency conditions of UPB and standards required by the National Council for Attestation of University Titles, Diplomas and Certificates (CNATDCU).

b) To propose research themes.

c) To ensure the participation of the PhD Student in the Program of training based on advanced university studies and the choice of the study elements of this program to be followed by the PhD student.

d) To ensure the participation of the PhD Student in scientific projects under the Program of scientific research,



e) Să organizeze și să monitorizeze stagiile studentului-doctorand de pregătire în străinătate și să avizeze rapoartele de stagiu ale acestuia.

f) Să urmărească participarea studentului-doctorand, pe parcursul ciclului de studii universitare de doctorat, la manifestări științifice naționale / internaționale - conferințe, congrese, seminarii, ateliere de lucru, școli de vară / iarnă etc. - în domeniul de doctorat, în scopul și limitele tezei de doctorat.

g) Să coordoneze elaborarea de către studentul - doctorand a lucrărilor științifice menționate în Regulamentul privind organizarea și desfășurarea studiilor universitare de doctorat din UPB și Regulamentul Școlii doctorale în care se înmatriculează.

h) Să analizeze Teza de doctorat și să întocmească un Raport de analiză.

i) Să evite apariția conflictelor de interese în îndrumarea studentului-doctorand.

#### **Art. 5. Drepturile conducătorului de doctorat**

a) Să participe la competiții pentru granturi doctorale.

b) Să solicite Școlii doctorale organizarea unui concurs de admitere pentru fiecare poziție de student-doctorand vacantă aflată sub îndrumarea sa.

c) Să selecteze candidatul la doctorat și să propună înmatricularea studentului-doctorand.

d) Să îndrume și să evalueze activitatea studentului-doctorand în cadrul programului de studii universitare de doctorat, conform autonomiei profesionale și universitare, urmărind exigențele programului programului de studii universitare de doctorat.

e) Să decidă elementele de studiu din cadrul Programului de pregătire bazat pe studii universitare avansate la care studentul-doctorand trebuie să participe.

f) Să urmărească diseminarea rezultatelor obținute de studentul-doctorand, sub coordonarea sa, în perioada studiilor doctorale, în activitatea doctorală, didactică sau de cercetare.

g) Să solicite Consiliului Școlii doctorale întreruperea relației de îndrumare cu un student-doctorand în cazul în care activitatea acestuia este necorespunzătoare.

e) To organize and monitor the placements for training abroad of the PhD Student and to approve the internship reports.

f) To follow the participation of the PhD Student during the university doctoral studies cycle, at national/ international scientific events – conferences, congresses, seminars, workshops, summer/ winter schools, in the doctoral field, in the scope and limitations of the doctoral thesis.

g) To coordinate the elaboration by the PhD Student of the scientific papers mentioned in the Regulation on organisation and unrolling of the doctoral university studies at the level of UPB, and the Regulation of the Doctoral School where he/ she is registered.

h) To analyse the Doctoral thesis and to draw up an Assessment Report.

j) To avoid the appearance of conflicts of interest in guidance of the PhD Student.

#### **Art. 5. The rights of the PhD Supervisor**

a) To participate in competitions for doctoral grants.

b) To require, to the Doctoral School, organisation of an admission contest for each PhD Student vacant position under his direction.

c) To select the candidate for doctoral university studies and to propose the registration of the PhD Student.

d) To guide and assess the work of the PhD Student in the doctoral university studies program, according to professional and academic autonomy, pursuing the requirements of the doctoral university studies program.

e) To decide the study items of the Program of training based on advanced university studies, to which the PhD Student has to participate.

f) To pursue the dissemination of results obtained by the PhD Student, under the PhD Supervisor coordination, during his/ her doctoral studies, in doctoral, teaching or research work.

g) To request to the Doctoral School Council the disruption of the guidance relationship with a PhD Student when his/her activity is inappropriate.



h) Să propună comisiile de îndrumare și pentru susținerea publică a tezei de doctorat.

#### **Art. 6. Obligațiile UPB**

a) Să asigure condițiile pentru ca studentul-doctorand să participe la cursuri programate în cadrul Programului de pregătire bazat pe studii universitare avansate puse la dispoziție de Școala doctorală proprie sau de către alte Școli doctorale.

b) Să asigure accesul studentului-doctorand la baza materială - bibliotecă, laboratoare etc. - a UPB, pentru a-și definitiva programul de doctorat.

c) Să multiplice rezumatul Tezei de doctorat în cel mult 50 de exemplare, fiecare - max. 30 pagini.

d) Să publice pe site-ul UPB informații privind Teza de doctorat și susținerea acesteia.

#### **Art. 7. Drepturile UPB**

a) Să rezilieze prezentul Contract de studii la solicitarea conducătorului de doctorat pentru activitate necorespunzătoare a studentului-doctorand (anularea Contractului de studii implică exmatricularea studentului-doctorand de la studii doctorale).

b) Să rezilieze prezentul Contract de studii în cazul depășirii termenelor prevăzute în contract (dacă studentul-doctorand nu are aprobare pentru întreruperea sau prelungirea perioadei programului de doctorat).

#### **Art. 8. Date privind tema de cercetare și Teza de doctorat**

a) Tema de cercetare: .....

b) Termenul de finalizare a Tezei de doctorat: .....

c) Teza de doctorat va fi redactată în limba .....

d) Condițiile de prelungire a termenului de finalizare a Tezei de doctorat sunt în conformitate cu prevederile legale și ale Regulamentului de organizare și desfășurare a studiilor universitare de doctorat din UPB.

h) To propose the commissions for mentoring and for public defense of the doctoral thesis.

#### **Art. 6. The obligations of UPB**

a) To ensure the conditions for PhD Student to attend the courses scheduled in the Program of training based on advanced university studies, provided by the own Doctoral School or by other Doctoral Schools.

b) To ensure access of the PhD Student to the material basis - libraries, labs, etc. - of UPB, to complete the doctoral program.

c) To multiply the summary of the Doctoral thesis in maximum 50 copies, each - up to 30 pages.

d) To publish information on the UPB site about Doctoral Thesis and its public defense.

#### **Art. 7. The rights of UPB**

a) To withdraw the present Contract at the request of the PhD Supervisor for an inappropriate activity of the PhD Student (cancellation of the present Contract implies the expelling of the PhD Student from the doctoral studies).

b) To withdraw the present Contract in the case of exceeding the terms stipulated in the contract (if the PhD Student does not have approval for the interruption or extension of the doctorate period).

#### **Art. 8. Data on the research theme and the Doctoral thesis**

a) Research theme: .....

b) The term time for completion of the Doctoral thesis: .....

c) The Doctoral thesis will be written in .....

d) The conditions on the extension of the term time for completion of the Doctoral thesis are in accordance with the legal provisions and with the Regulation on organisation and unrolling of the doctoral university studies at UPB.





**Art. 9. Clauze finale**

a) Prezentul contract a fost încheiat la data de ....., în 3 exemplare, un exemplar pentru dosarul studentului-doctorand, un exemplar pentru conducătorul de doctorat și un exemplar pentru studentul-doctorand.

b) Perioada de valabilitate a contractului este de 3 ani de la data încheierii. În cazul în care se obțin avize pentru întreruperi sau prelungiri ale programului de doctorat, durata de valabilitate se prelungește cu perioadele prevăzute în aceste avize.

c) În conformitate cu prevederile Legii Educației Naționale 1/2011, art. 168 alin. (9), teza de doctorat este un document public. Teza de doctorat și anexele sale se publică pe un site administrat de Ministerul Educației și Cercetării, în condițiile în care doctorandul nu optează pentru publicarea separată a tezei. Publicarea tezei de doctorat se face atât cu numele și prenumele studentului-doctorand, dar și cu numele și prenumele conducătorului de doctorat.

**Art. 9. Final provisions**

a) The present Contract has been concluded on ....., in 3 copies, one copy for the PhD Student dossier, one copy for the PhD Supervisor, and one copy for the PhD Student.

b) The period of validity of the present Contract is of 3 years from the date of conclusion. In the case of getting approvals for interruptions or extensions of the doctorate program, the duration of validity is prolonged with the periods referred in these approvals.

c) According to the stipulations of National Education Law 1/2011, art. 168 alin. (9), the PhD thesis is a public document. The PhD thesis and its annexes are published on a website administrated by Ministry of Education and Research if the PhD student does not choose to separately publish the thesis. The publication of PhD thesis is done together with the name and surname of the PhD student but also including the name and surname of the PhD supervisor.

**Rector,**

**Mihnea COSTOIU**

**Director al Școlii Doctorale /  
Director,**

**Conducător de doctorat /**

**PhD Supervisor,**

**Student-doctorand /**

**PhD Student,**



## Annex 2 Catalog Sheet Template



Școala Doctorală de Electronică, Telecomunicații și Tehnologia Informației  
Universitatea Politehnică din București

Filă de catalog

Contract de studii doctorale nr \_\_\_\_\_

Disciplina nr. \_\_\_\_

din Programul de Pregătire Avansată

Domeniul fundamental de doctorat: *Științe Inginerești*

Domeniul de doctorat: *Inginerie Electronică, Telecomunicații și Tehnologii Informaționale*

Student-doctorand: \_\_\_\_\_

Denumirea disciplinei de specialitate: \_\_\_\_\_

### Evaluarea disciplinei

Data evaluării	_____	Semnătura
Calificativul acordat*	_____	
Conducător de doctorat	Prof. dr. ing. _____	
Comisia de evaluare	Prof. dr. ing. _____	
	Prof. dr. ing. _____	
	Prof. dr. ing. _____	

\*) Disciplina se consideră promovată dacă se acordă calificativul "Foarte bine" sau "Bine". În cazul acordării calificativului "Satisfăcător", prezentarea și evaluarea trebuie să se repete în termen de maxim 30 de zile.

Avizat Directorul Școlii Doctorale,

Prof. dr. ing. Bogdan IONESCU

Bd. Iuliu Maniu nr. 1-3, ETTI corp A, 061071, București  
Tel.: 021 402 48 67, 021 402 47 04  
Email: [sdetti@upb.ro](mailto:sdetti@upb.ro)  
Website: <http://www.sdetti.upb.ro/>, <https://upb.ro/>



Școala Doctorală de Electronică, Telecomunicații și Tehnologia Informației  
Universitatea Politehnică din București

Filă de catalog

Contract de studii doctorale nr \_\_\_\_\_

**Raportul științific nr. \_/20\_**  
**din Programul de Cercetare Științifică**

Domeniul fundamental de doctorat: *Științe Inginerești*

Domeniul de doctorat: *Inginerie Electronică, Telecomunicații și Tehnologii Informaționale*

Student-doctorand: \_\_\_\_\_

Denumirea raportului: \_\_\_\_\_

**Evaluarea raportului**

Data prezentării și evaluării		_____	Semnătura
Calificativul acordat*		_____	
Conducător de doctorat	Prof. dr. ing. _____		
Comisia de evaluare	Prof. dr. ing. _____		
	Prof. dr. ing. _____		
	Prof. dr. ing. _____		

\*) Raportul se consideră promovată dacă se acordă calificativul "Foarte bine" sau "Bine". În cazul acordării calificativului "Satisfăcător", prezentarea și evaluarea trebuie să se repete în termen de maxim 30 de zile.

Avizat Directorul Școlii Doctorale,

Prof. dr. ing. Bogdan IONESCU

Bd. Iuliu Maniu nr. 1-3, ETTI corp A, 061071, București

Tel.: 021 402 48 67, 021 402 47 04

Email: [sdetti@upb.ro](mailto:sdetti@upb.ro)

Website: <http://www.sdetti.upb.ro/>, <https://upb.ro/>



## Annex 3 PPA Graduation Certificate Template



Registration number

\_\_\_\_/\_\_\_\_

### CERTIFICATE

To whom it may concern,

We hereby certify that Ms./Mr. \_\_\_\_\_ is a PhD student enrolled with the Doctoral School of Electronics, Telecommunications, and Information Technology (SD-ETTI), from Politehnica University of Bucharest (UPB), in the Engineering Sciences field and Electronic Engineering, Telecommunications, and Information Technology domain, enrolled from \_\_\_\_\_ under the supervision of Prof. dr. eng. \_\_\_\_\_. The title of the thesis is \_\_\_\_\_.

Ms./Mr. \_\_\_\_\_ successfully graduated the following exams and reports as part of her/his doctoral programme:

#### Exams

Title	grade
1. _____	
2. _____	

#### Reports

Title	grade
1. _____	
2. _____	
3. _____	
4. _____	

*This certificate was issued at the request of the holder.*

Director,

Secretariat,

Prof. dr. eng. Bogdan IONESCU

Eng. Nicoleta BRĂNIȘTEANU

1-3 Iuliu Maniu Bd., ETTI building A, 061071, Bucharest, Romania  
Tel.: 021 402 48 67, 021 402 47 04  
Email: [sdetti@upb.ro](mailto:sdetti@upb.ro)  
Website: <http://www.sdetti.upb.ro/>, <https://upb.ro/>



## Annex 4 Cotutelle Agreement Template



Scoala Doctorală de Electronică,  
Telecomunicații și Tehnologia  
Informației, Universitatea Politehnica  
din București

logo here

Doctoral School \_\_\_\_\_  
University \_\_\_\_\_

**AGREEMENT FOR A BI-NATIONALLY  
SUPERVISED DOCTORAL THESIS  
("CO-TUTELLE DE THÈSE")  
BETWEEN  
UNIVERSITATEA POLITEHNICA DIN BUCUREȘTI (ROMÂNIA)  
AND**

---

According to the Romanian national Regulations for Doctoral Research Programmes issued by the Romanian Government through the National Education Law, No. 1 of 2011, with its subsequent amendments; The Code of Doctoral Studies approved via H.G. no. 681/2011; Law no. 288/2004 on the Organization of University Studies, with the amendments from Law no. 49/2013; Order no. 3482/2016 on the approval of the Regulation of the Organization and Functioning of the National Council for Attestation of University Degrees, Diplomas and Certificates (CNATDCU); Order no. 5229/2020 on the approval of the Methodologies regarding the granting of the doctoral title and quality and ethics standards; Carta Universității Politehnica din București (UPB); and The Regulation for the Organization and Conduct of Doctoral University Studies within UPB and within the Doctoral School of Electronics, Telecommunications and Information Technology (SD-ETTI);

According to the \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The procedure of Bi-nationally Supervised Doctoral Theses ("co-tutelle de thèse") is signed by:

the UNIVERSITATEA POLITEHNICA DIN BUCUREȘTI (România), in the person of the Rector, Mihnea COSTOIU,  
email: mihnea.costoiu@upb.ro, tel. +40 21-317 10 01, fax. + 40 21-317 10 02;

and

\_\_\_\_\_  
\_\_\_\_\_



Scoala Doctorală de Electronică,  
Telecomunicații și Tehnologia  
Informației, Universitatea Politehnica  
din București

logo here

Doctoral School \_\_\_\_\_  
University \_\_\_\_\_

**For this purpose, both Institutions agree on the following rules:**

#### **Article 1: Enrollment**

Mr/Ms \_\_\_\_\_, hereafter called 'Doctoral Student', enrolled in the \_\_\_\_\_ year of the Doctoral Programme in "Electronic Engineering, Telecommunications and Information Technology", Doctoral School of Electronics, Telecommunications and Information Technology (SD-ETTI), which has administrative seat at the Politehnica University of Bucharest (UPB), hereafter called 'Home University/Institute', is going to take part to a bi-nationally supervised doctoral thesis ("co-tutelle de thèse").

Starting from the day of the signature of the Agreement the Doctoral Student will be considered regularly enrolled also in the Doctoral Programme in "\_\_\_\_\_" which has its administrative seat at the \_\_\_\_\_, hereafter called 'Partner University/Institute'.

The student will pay the enrolment fees at the Home University/Institute and will be relieved of paying fees at the Partner University/Institute.

Notwithstanding the joint responsibility for the academic supervision of the doctoral project, the Home University/Institute will assume the responsibility for all administrative procedures.

#### **Article 2: Supervision**

The doctoral student will carry out his project research under the supervision and responsibility of one supervisor belonging to the Home University/Institute and one from the Partner University/Institute who have the joint responsibility of providing the supervision of the doctoral activities under the observance of the respective regulations.

The supervisor for the Home University/Institute will be Prof. \_\_\_\_\_, standing faculty of the University in the Faculty of Electronics, Telecommunications and Information Technology.

The supervisor for the Partner University/Institute will be Prof. \_\_\_\_\_, standing faculty of the University in the Faculty/Department \_\_\_\_\_.

#### **Article 3: Research activities**

The duration of Mr/Ms \_\_\_\_\_ doctoral program is three years. An extension for a maximum of two years can be granted in accordance with the regulations of both Universities/Institutes. For the Partner University/Institute, the student must be administratively enrolled for a minimum of two years before getting the degree after enrollment at the Home University/Institute. Of these two years, one year needs to be spent at Partner University/Institute. Both institutions, the Home and Partner Universities/Institutes, should agree



Scoala Doctorală de Electronică,  
Telecomunicații și Tehnologia  
Informației, Universitatea Politehnica  
din București

logo here

Doctoral School \_\_\_\_\_  
University \_\_\_\_\_

on the place, duration and frequency of the alternating research periods (minimum one semester) carried out by the doctoral student during his doctoral programme at the two institutions.

#### Article 4: Exams and yearly evaluations

The student will act in accordance with current regulations of the two Doctoral Schools, Doctoral School of Electronics, Telecommunications and Information Technology (SD-ETTI) and \_\_\_\_\_ . The student needs to obtain the credits required in terms of attendance to courses, as per Home University/Institute and Partner University/Institute regulations. For the Partner University/Institute, the classes and credits can be attended/earned during the period at Partner University/Institute, or they can be obtained at the Home University/Institute and recognized by the Doctoral Schools.

#### Article 5: Thesis and Language

The preparation of the thesis will be realized in co-operation between the two Universities/Institutes. The provisional title of the thesis will be the following: \_\_\_\_\_ . The thesis should be written and defended in English. The abstract should be written in English also. An additional abstract of the thesis written in the Romanian language should also be provided for the UPB. English will be the official language of all administrative correspondence and meetings.

#### Article 6: Fees and financial support

Both Universities/Institutes will provide the doctoral student with the needed teaching and research facilities and guarantee the same services supplied to their own doctoral students. Financial aid for supporting the thesis, the housing, and the travels between the two sites may be granted by the partners. These aspects are to be specified for each case. Each University/Institute will support the mobility expenses of its own professors.

#### Article 7: Final Examination

The final examination consists of a single discussion of the thesis before an Examination Board, established by mutual agreement of both Universities/Institutes and complying with the regulations of both countries. Both partner Universities/Institutes are to be equally represented. The Examination Board will include the advisor at the Home and Partner University/Institute and at least four other members. At least two members of the Examination Board must come from other Universities/Institutes than the Home and Partner





Scoala Doctorală de Electronică,  
Telecomunicații și Tehnologia  
Informației, Universitatea Politehnica  
din București

logo here

Doctoral School \_\_\_\_\_  
University \_\_\_\_\_

University/Institute. The final exam will take place at the Home University/Institute (or at the Partner University/Institute if agreed) of the student.

#### Article 8: Doctoral Degree

Upon completion of a successful final examination, the candidate will receive the doctoral degree from both Universities/Institutes. The doctoral document will entitle the recipient to use either the Romanian or the \_\_\_\_\_ form of the doctoral title. Each Degree will have the format of the specific University/Institute that issued it.

#### Article 9: Insurance

During the period of thesis, the student will be covered by the insurance plan of the country where the study fees are paid. It is the responsibility of the student to take care of all the necessary formalities for travelling and staying at the Partner University/Institute, e.g., travel authorization, social and civil liability insurance, etc. The Partner University/Institute should help the student and provide local insurance plan, if possible.

#### Article 10: Intellectual Property Rights

The intellectual property rights of the thesis, the publication, the use and protection of the research results will be copyrighted in accordance with the specific regulations of the two countries or on agreements between the parties involved in the co-operation agreement. The number of copies of the thesis to be deposited at each University/Institute depends on the respective regulations.

RECTOR

UNIVERSITATEA POLITEHNICA DIN BUCUREȘTI

Mihnea COSTOIU

RECTOR

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Bucharest, DD-MM-YYYY

\_\_\_\_\_, DD-MM-YYYY



Doctoral School of Electronics, Telecommunications and Information Technology  
Politehnica University of Bucharest



Școala Doctorală de Electronică,  
Telecomunicații și Tehnologia  
Informației, Universitatea Politehnica  
din București

logo here

Doctoral School \_\_\_\_\_  
University \_\_\_\_\_

Director

Director

Școala Doctorală de Electronică,  
Telecomunicații și Tehnologia Informației  
Prof. Bogdan IONESCU

Doctoral School of \_\_\_\_\_  
Prof. \_\_\_\_\_

PhD Supervisor,  
UNIVERSITATEA POLITEHNICA DIN BUCUREȘTI  
Prof. \_\_\_\_\_

PhD Supervisor,  
Prof. \_\_\_\_\_

Doctoral student,  
Mr/Ms \_\_\_\_\_

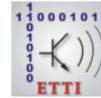
\_\_\_\_\_



## Annex 5 Doctoral Thesis Template



**POLITEHNICA UNIVERSITY  
OF BUCHAREST**



**Doctoral School of Electronics, Telecommunications  
and Information Technology**

Decision No. \_\_\_\_ from DD-MM-YYYY

# **Ph.D. THESIS**

**First Name LAST NAME**

---

**MODEL DE REDACTARE A TEZEI DE DOCTORAT  
LA ȘCOALA DOCTORALĂ SD-ETTI**

**TEMPLATE FOR WRITING THE DOCTORAL  
THESIS AT THE SD-ETTI DOCTORAL SCHOOL**

---

### **THESIS COMMITTEE**

<b>Prof. Dr. Ing. Bogdan IONESCU</b> Politehnica Univ. of Bucharest	President
<b>Prof. Dr. Ing. Gheorghe BREZEANU</b> Politehnica Univ. of Bucharest	PhD Supervisor
<b>Prof. Dr. Ing. Ion MARGHESCU</b> Politehnica Univ. of Bucharest	Referee
<b>Prof. Dr. Ing. Mihai CIUC</b> Politehnica Univ. of Bucharest	Referee
<b>Dr. Ing. Dorin COMĂNICIU</b> Siemens Healthcare	Referee

**BUCHAREST 2020**

---



**Writing instructions for doctoral students**  
(this text is not part of the thesis)

***General formatting instructions***

- The thesis is written in A4 format, at 1.15 lines, with 12pt. Times New Roman. Printing is done on both sides of the A4 sheet.
- The edges of the text are 1.5" (3.5 cm) left and 1" (2.5 cm) right, top and bottom. The page number is inserted at the bottom, centered, at least 0.75" (2 cm) from the bottom edge of the page. The inner cover is not paginated.
- The pages of: Acknowledgments, Contents, List of tables, List of figures and List of abbreviations are paginated with small Roman numerals: i, ii, iii, etc.
- The chapters, bibliography and annexes are paginated in Arabic numerals. The exception is the first page of each chapter, on which the page number must not appear.
- The even pages of the chapters are headed by the title of the thesis written in 10pt. Times New Roman. If necessary, the title should be abbreviated to fit a single row.
- The odd pages of the chapters are headed by the title of the chapter written in 10pt. Times New Roman. The exception is the first page of each chapter.
- The thesis includes, in order, the following sections / information:
  - Inside cover (right page).
  - Free page (back cover).
  - Acknowledgments page.
  - Contents.
  - List of tables.
  - List of figures.
  - List of abbreviations.
  - Thesis chapters.
  - Annexes.
  - Bibliography.
- All sections start on an odd page (right page in print).
- Avoid ending the text with isolated lines at the top of a page or writing the section title at the end of a page.

***Instructions for Acknowledgments***

- The title is written on the first line, centered, in bold, with 18pt. Times New Roman. The text starts 2 lines below the title. The text starts with no paragraph. Inside the section, the paragraph is 0.25".

***Instructions for Contents***

- It includes the list of all chapters, sections (n.1) and subsections (n.1.1).



### ***Instructions for List of tables, List of figures, and List of abbreviations***

- Each list starts on an odd new page (the page on the right in the printed version). The title of the list is written on the left, in bold, 28pt. Times New Roman, 9 lines from the top edge. Tables and figures appear with chapter numbering. The list starts 3 lines below the title.

### ***Instructions for Introduction, Conclusions, Chapters and Annexes***

- The introduction, the conclusions and the rest of the chapters start on odd new pages (the page on the right in the printed version). The starting page contains:
  - Chapter n (left, in bold, 28pt. Times New Roman, 9 rows from the top edge).
  - Chapter title (left, in bold, 28pt. Times New Roman, 2 lines from Chapter n).
  - The text of the chapter (12pt. Times New Roman, 3 lines from Chapter title).
- Section title (left, in bold, 18pt. Times New Roman, at 2 lines).
- Subsection title (left, in bold, 14pt. Times New Roman, at 2 lines).
- The text begins 3 lines below the chapter title and 2 lines below the section / subsection title, with no paragraph. Inside the chapter, the paragraph is 0.25".
- The mention in the text of a bibliographic reference is made in square brackets. For example [12] refers to the paper with this issue in the Bibliography.
- The introductory chapter must contain the following sections:
  - Presentation of the field of the doctoral thesis.
  - The scope of the doctoral thesis.
  - The content of the doctoral thesis.
- The Conclusions chapter must contain the following sections:
  - Obtained results.
  - Original contributions.
  - List of original publications.
  - Perspectives for further developments.
- The annexes are edited according to the rules for chapters. The only difference is in the first title, which is called Annex.

### ***Instructions for equations, tables and figures***

- Equations must be centered and numbered according to the chapter number and the order in the chapter. The first number represents the chapter number, and the second the sequence number of the equation in the chapter. The

equations are written with an equation editor, having the size of 12pt. (as well as the text). The terms used will be explained. Example:

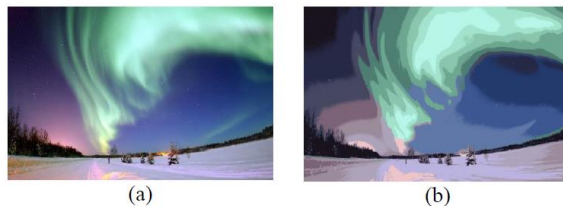
$$E = m \cdot c^2 \quad (1.1)$$

where  $E$  represents energy,  $m$  is mass and  $c$  is the speed of light.

- Figures and Tables are centered and must be large enough for the information contained to be legible. For tables, the text is recommended to be Times New Roman between 9pt. and 12pt., no larger than the text in the sections. The images, diagrams, presented in the figures must have a resolution high enough for all the information in them to be legible. It is recommended to generate them using vector graphics so that they can be scalable to view. The titles of the tables and the legend of the figures are written in 12pt. Times New Roman, italic, and are numbered according to the chapter number and the order in the chapter. The title of the tables is at the top of the table and the legend of the figures at the bottom of the figure. It is necessary to refer to these tables and figures in the text where they are explained and commented. Formatting examples:

*Table 3.1 Numerical data obtained from measurements.*

Col 1	Col 2	Col 3
1,12678	2,12678	3,12678



*Figure 2.4 Image segmentation example: (a) the original image, (b) the segmented image.*

### ***Bibliography instructions***

- Bibliographic references must be placed at the end of the thesis. It is necessary to refer to the bibliography in the text and not just the listing of bibliographic references.
- The title Bibliography is written in 28pt. Times New Roman, bold, 8 lines from the top edge. The content of the bibliography starts 2 lines below the title and is written in 11pt. Times New Roman. A bibliographic reference must contain all information about the publication so that it can be easily identified and accessed, e.g.:

[1] A.I. Purică, E.G. Mora, B. Pesquet-Popescu, M. Cagnazzo, B. Ionescu, *Multiview plus Depth Video Coding with Temporal Prediction View Synthesis*, IEEE Transactions on Circuits and Systems for Video Technology, 26(2), pp. 360-374, 2016.



[2] I.C. Duță, B. Ionescu, K. Aizawa, N. Sebe, *Spatio-temporal VLAD Encoding for Human Action Recognition in Videos*, International Conference on Multimedia Modeling - MMM, pp. 365-378, January 4-6, Reykjavik, Iceland, 2017.

[3] C.-H. Demarty, C. Penet, B. Ionescu, G. Gravier, M. Soleymani, *Multimodal violence detection in Hollywood movies: State-of-the-art and Benchmarking*, Fusion in Computer Vision - Understanding Complex Visual Content, Springer Advances in Computer Vision and Pattern Recognition, pp. 185-208, ISBN: 978-3-319-05695-1, Eds. J. Benois-Pineau, G. Quénot, T. Piatrik, B. Ionescu, 2014.





## Acknowledgements

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.



## Content

List of tables .....	v
List of figures .....	vii
List of abbreviations .....	ix
1. Introduction .....	1
1.1. Presentation of the field of the doctoral thesis .....	1
1.2. Scope of the doctoral thesis .....	2
1.3. Content of the doctoral thesis .....	3
2. Chapter name .....	5
2.1. Section name .....	5
2.1.1. Subsection name .....	6
2.1.2. Subsection name .....	7
2.2. Section name .....	7
2.2.1. Subsection name .....	8
2.2.2. Subsection name .....	8
...	
n. Conclusions .....	
n.1. Obtained results .....	
n.2. Original contributions .....	
n.3. List of original publications .....	
n.4. Perspectives for further developments .....	
Annexes .....	
A.1 Annex 1 name .....	
A.2 Annex 2 name .....	
...	
Bibliography .....	



## List of tables

Table 3.1 Numerical data obtained from measurements .....	101
-----------------------------------------------------------	-----



## List of figures

Figure 2.4 Image segmentation example .....	12
---------------------------------------------	----



## List of abbreviations

FET – Field Effect Transistor

CMOS – Complementary Metal-Oxide-Semiconductor

GAN – Generative Adversarial Network



# Chapter 1

## Introduction

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.

### 1.1 Presentation of the field of the doctoral thesis

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit



Template for Writing the Doctoral Thesis at the SD-ETTI Doctoral School

scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.

## 1.2 Scope of the doctoral thesis

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.





### 1.3 Content of the doctoral thesis

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.



## Chapter 2

### Chapter name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.

#### 2.1 Section name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit



Template for Writing the Doctoral Thesis at the SD-ETTI Doctoral School

scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.

### 2.1.1 Subsection name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.



Chapter 2 – Chapter name

### 2.1.2 Subsection name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.

## 2.2 Section name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae



Template for Writing the Doctoral Thesis at the SD-ETTI Doctoral School

congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.

### 2.2.1 Subsection name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.

### 2.2.2 Subsection name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut



Chapter 2 – Chapter name

consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.





## Chapter n

### Conclusions

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.

#### n.1 Obtained results

The concrete results obtained in each chapter will be presented.

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim





Template for Writing the Doctoral Thesis at the SD-ETTI Doctoral School

tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.

## n.2 Original contributions

Original contributions will be briefly listed and numbered. Each contribution will specify the original works where the contribution was published. The mention is made by [m, p] where m and p are the numbers of the original works from the list completed in the next section.

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat



Chapter n – Conclusions

pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.

### **n.3 List of original publications**

This list includes only published / communicated papers in which the doctoral student is the author or co-author. To these are added the research reports from the doctoral program and the contracts on which the doctoral student worked. All these works can also be found in the Bibliography. All the mentioned works must have a content related to the topic of the doctoral thesis.

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet.

### **n.4 Perspectives for further developments**

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit



Template for Writing the Doctoral Thesis at the SD-ETTI Doctoral School

scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.



## Annexes

### A.1 Annex 1 name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissima enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.



## A.2 Annex 2 name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris. Nisl vel pretium lectus quam id leo in vitae turpis. Ac ut consequat semper viverra nam libero justo laoreet. Quis ipsum suspendisse ultrices gravida dictum fusce ut placerat orci. In iaculis nunc sed augue lacus viverra vitae. Feugiat nibh sed pulvinar proin. Venenatis cras sed felis eget. Egestas integer eget aliquet nibh. Non arcu risus quis varius. Sed sed risus pretium quam vulputate.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.



## Bibliography

- [1] A.I. Purică, E.G. Mora, B. Pesquet-Popescu, M. Cagnazzo, B. Ionescu, *Multiview plus Depth Video Coding with Temporal Prediction View Synthesis*, IEEE Transactions on Circuits and Systems for Video Technology, 26(2), pp. 360-374, 2016.
- [2] I.C. Duță, B. Ionescu, K. Aizawa, N. Sebe, *Spatio-temporal VLAD Encoding for Human Action Recognition in Videos*, International Conference on Multimedia Modeling - MMM, pp. 365-378, January 4-6, Reykjavik, Iceland, 2017.
- [3] C.-H. Demarty, C. Penet, B. Ionescu, G. Gravier, M. Soleymani, *Multimodal Violence Detection in Hollywood Movies: State-of-the-art and Benchmarking*, Fusion in Computer Vision - Understanding Complex Visual Content, Springer Advances in Computer Vision and Pattern Recognition, pp. 185-208, ISBN: 978-3-319-05695-1, Eds. J. Benois-Pineau, G. Quénot, T. Piatrik, B. Ionescu, 2014.

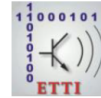
...



## Annex 6 Doctoral Thesis Summary Template



**POLITEHNICA UNIVERSITY  
OF BUCHAREST**



**Doctoral School of Electronics, Telecommunications  
and Information Technology**

Decision No. \_\_\_\_ from DD-MM-YYYY

### **Ph.D. THESIS SUMMARY**

**First Name LAST NAME**

---

**MODEL DE REDACTARE A TEZEI DE DOCTORAT  
LA ȘCOALA DOCTORALĂ SD-ETTI**

**TEMPLATE FOR WRITING THE DOCTORAL  
THESIS AT THE SD-ETTI DOCTORAL SCHOOL**

---

#### **THESIS COMMITTEE**

<b>Prof. Dr. Ing. Bogdan IONESCU</b> Politehnica Univ. of Bucharest	President
<b>Prof. Dr. Ing. Gheorghe BREZEANU</b> Politehnica Univ. of Bucharest	PhD Supervisor
<b>Prof. Dr. Ing. Ion MARGHESCU</b> Politehnica Univ. of Bucharest	Referee
<b>Prof. Dr. Ing. Mihai CIUC</b> Politehnica Univ. of Bucharest	Referee
<b>Dr. Ing. Dorin COMĂNICIU</b> Siemens Healthcare	Referee

**BUCHAREST 2020**

---





**Writing instructions for doctoral students**  
(this text is not part of the summary)

- The summary of the doctoral thesis must respect the formatting and keep the structure of the chapters and sections of the main parts of the doctoral thesis.
- It briefly presents the main achievements of the doctoral thesis.
- It should not exceed 30 pages.
- The figures and equations should keep the numbers assigned in the thesis.
- In particular, the sections Original contributions and List of original publications are reproduced exactly in the summary.
- The bibliography contains only a list of selected references.



## Content

1. Introduction .....	1
1.1. Presentation of the field of the doctoral thesis .....	1
1.2. Scope of the doctoral thesis .....	2
1.3. Content of the doctoral thesis .....	2
2. Chapter name .....	3
2.1. Section name .....	3
2.1.1. Subsection name .....	4
2.1.2. Subsection name .....	4
2.2. Section name .....	4
2.2.1. Subsection name .....	5
2.2.2. Subsection name .....	5
...	
n. Conclusions .....	
n.1. Obtained results .....	
n.2. Original contributions .....	
n.3. List of original publications .....	
n.4. Perspectives for further developments .....	
Bibliography .....	



# Chapter 1

## Introduction

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio.

### 1.1 Presentation of the field of the doctoral thesis

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur.



## 1.2 Scope of the doctoral thesis

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi.

## 1.3 Content of the doctoral thesis

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi. Vitae congue mauris rhoncus aenean vel elit scelerisque mauris.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi.



## Chapter 2

### Chapter name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum.

#### 2.1 Section name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien.



### 2.1.1 Subsection name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum.

### 2.1.2 Subsection name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi.

## 2.2 Section name

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae



congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio.

### **2.2.1 Subsection name**

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi.

### **2.2.2 Subsection name**

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi.





## Chapter n

### Conclusions

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio.

#### n.1 Obtained results

The concrete results obtained in each chapter will be presented.

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero.

#### n.2 Original contributions

Original contributions will be briefly listed and numbered. Each contribution will specify the original works where the contribution was published. The mention is made



by [m, p] where m and p are the numbers of the original works from the list completed in the next section.

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna.

### **n.3 List of original publications**

This list includes only published / communicated papers in which the doctoral student is the author or co-author. To these are added the research reports from the doctoral program and the contracts on which the doctoral student worked. All these works can also be found in the Bibliography. All the mentioned works must have a content related to the topic of the doctoral thesis.

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc.

### **n.4 Perspectives for further developments**

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Facilisi morbi tempus iaculis urna id volutpat lacus laoreet non. Arcu non sodales neque sodales ut etiam sit. Nascetur ridiculus mus mauris vitae ultricies leo integer malesuada nunc. Nulla aliquet enim tortor at auctor urna. Placerat orci nulla pellentesque dignissim enim sit. Est ullamcorper eget nulla facilisi.

Est ultricies integer quis auctor elit sed vulputate mi sit. Etiam sit amet nisl purus in mollis nunc sed. Nunc pulvinar sapien et ligula ullamcorper malesuada proin libero. Fermentum leo vel orci porta non pulvinar neque laoreet suspendisse. Donec ultrices tincidunt arcu non sodales. In iaculis nunc sed augue lacus viverra vitae congue eu. Vitae purus faucibus ornare suspendisse sed nisi. Condimentum lacinia quis vel eros donec ac odio. Aliquam nulla facilisi cras fermentum odio eu feugiat pretium. Et ligula ullamcorper malesuada proin libero nunc consequat interdum. Hendrerit dolor magna eget est lorem ipsum dolor sit amet. Scelerisque in dictum non consectetur. Neque viverra justo nec ultrices dui sapien. Semper risus in hendrerit gravida rutrum quisque. Ut ornare lectus sit amet. Aliquet nec ullamcorper sit amet risus nullam eget. Dignissim diam quis enim lobortis scelerisque fermentum.



## Bibliography

- [1] A.I. Purică, E.G. Mora, B. Pesquet-Popescu, M. Cagnazzo, B. Ionescu, *Multiview plus Depth Video Coding with Temporal Prediction View Synthesis*, IEEE Transactions on Circuits and Systems for Video Technology, 26(2), pp. 360-374, 2016.
- [2] I.C. Duță, B. Ionescu, K. Aizawa, N. Sebe, *Spatio-temporal VLAD Encoding for Human Action Recognition in Videos*, International Conference on Multimedia Modeling - MMM, pp. 365-378, January 4-6, Reykjavik, Iceland, 2017.
- [3] C.-H. Demarty, C. Penet, B. Ionescu, G. Gravier, M. Soleymani, *Multimodal Violence Detection in Hollywood Movies: State-of-the-art and Benchmarking*, Fusion in Computer Vision - Understanding Complex Visual Content, Springer Advances in Computer Vision and Pattern Recognition, pp. 185-208, ISBN: 978-3-319-05695-1, Eds. J. Benois-Pineau, G. Quénot, T. Piatrik, B. Ionescu, 2014.

...



## Annex 7 Preliminary Stages to the Public Defense

- 1) The doctoral student submits the thesis at the SD-ETTI secretariat.
- 2) The doctoral supervisor performs the similarity analysis using the similarity analysis program provided by IOSUD.
- 3) Similarity reports are included in the doctoral file. The verification period cannot exceed 30 days from the date of submitting the doctoral thesis to IOSUD.
- 4) Identifying (at the time of evaluating the thesis by the doctoral supervisor or by the guidance committee) violations of good conduct in research and development, including plagiarism of results or publications of other authors, preparation of results or replacement of results with fictitious data (according to Art. 24 of this Regulation) must be notified to the UPB Ethics Commission, for analysis. If the UPB Ethics Commission establishes the guilt of plagiarism, the doctoral student is expelled and the provisions of Art. 25 of these Regulations are applied.
- 5) The doctoral thesis is presented to the Doctoral Supervisor and the Steering Committee. After this presumption, the Doctoral Supervisor and the Steering Commission decide on the official submission of the thesis and the organization of the public defense. The acceptance report of the Doctoral Supervisor and the agreement of the Members of the guiding committee are included in the doctoral file. The duration of the thesis evaluation process in the Steering Committee is 30 days and can be extended by a maximum of 30 days in duly justified situations.
- 6) The doctoral thesis is officially submitted to the SD-ETTI secretariat, in printed and electronic format, together with the summary of the doctoral thesis and the CV of the doctoral student. The SD-ETTI Secretariate certifies the fulfillment by the doctoral student of all the obligations within the doctoral studies program, PPA and PCS.
- 7) The doctoral commission must comply with the provisions of Art. 67 of the Code of Doctoral University Studies, approved by H.G. no. 681/2011, with subsequent amendments and completions.
- 8) The form for setting the date of public defense of the doctoral thesis, endorsed by the Doctoral Supervisor and the President of the doctoral committee, shall be submitted to the SD-ETTI secretariat at least 20 days before the proposed date for the defense. SD-ETTI draws up and displays the announcement for public defense at least 20 calendar days before the proposed date of defense.



## Annex 8 Content of the Doctoral Thesis Defense Dossier

- 1) The doctoral file is available in printed and electronic format (PDF).
- 2) The doctoral file contains the following documents:
  - a) Scanned copy of the identity document of the doctoral student.
  - b) Scanned copy of the doctoral student's birth certificate.
  - c) Scanned copy of marriage certificate, if applicable.
  - d) Scanned copy after: Baccalaureate diploma or equivalent, university diplomas (Bachelor and Advanced Studies / Master) or equivalent certificates, accompanied by their annexes, such as transcripts.
  - e) Copy of the receipt regarding the fee payment for the doctoral thesis defense.
  - f) Doctoral student's CV and list of papers.
  - g) Acceptance decision to the doctoral university studies program.
  - h) The doctoral studies contract and additional documents, as the case may be. The doctoral studies contract contains provisions regarding the publication of the doctoral thesis according to the law, accompanied by the name and surname of both doctoral student and doctoral supervisor. Personal data, except for the name, will not be publicly visible.
  - i) Signed form by the doctoral student, registered at SD-ETTI, regarding the procedures start for analyzing the similarities and evaluating the thesis by the Steering Commission, endorsed by the Doctoral Supervisor, in order to be substantiated.
  - j) The minutes from the doctoral thesis presentation in the department and before the Steering Commission, which results in the public defense agreement for the doctoral thesis.
  - k) Scanned copy after the declaration signed by both doctoral student and doctoral supervisor regarding the assumption of responsibility regarding the assurance of the originality of the doctoral thesis content, as well as the observance of the quality and professional ethics standards, according to Art. 143, par. (4) and Art. 170 of the National Education Law no. 1/2011, with subsequent amendments and completions, and of Art. 65, para. (5) - (7) of the Doctoral Studies Code, approved by H.G. no. 681/2011, with subsequent amendments and completions.
  - l) The similarity reports together with the analysis of the doctoral supervisor and, as the case may be, of other persons who analyzed the report, which includes the resolution regarding the originality of the thesis content.
  - m) The report prepared by SD-ETTI, preliminary to the public defense of the thesis and the documents attesting the course of the study program.
  - n) The composition proposal of the Doctoral Committee, formulated by the Doctoral Supervisor / Principal Doctoral Supervisor and approved by CSD and CSUD.



- o) CVs of the Doctoral Committee members.
- p) Appoint decision of the Doctoral Committee.
- q) The form for setting the public defense date of the doctoral thesis, endorsed by the Doctoral Supervisor and the Chairman of the Doctoral Committee, submitted to the SD-ETTI secretariat at least 20 calendar days before the proposed defense date.
- r) Notice of public defense, prepared by SD-ETTI at least 20 calendar days before the defense proposed date.
- s) Certificate regarding the submission of a printed doctoral thesis copy at the UPB library.
- t) Signed Reports of Doctoral Committee members, in the form of scanned copies or electronically signed documents.
- u) The acceptance report of the doctoral thesis from the Doctoral Supervisor.
- v) Assent of the Steering Commission for the submission of the doctoral thesis to the SD-ETTI secretariat.
- w) The minutes of the doctoral thesis public defense and the annex with questions and answers, which contains the proposal for granting the doctoral degree, signed by all members of the doctoral committee, in the form of a scanned copy or an electronically signed document.
- x) Printed and electronic summary (editable PDF) of the doctoral thesis in Romanian and, respectively, in English or in another language of international circulation, which includes the content of the doctoral thesis, keywords and synthesis of the main parts of the thesis (one copy of each).
- y) Doctoral thesis and its annexes, in electronic format (editable PDF, not scanned).
- z) List of publications resulting from scientific research in the doctoral program, published or accepted for publication, if applicable and scanned copies of those publications (PDF).
- aa) The doctoral student statement regarding his publication options of the doctoral thesis on the national platform, in accordance with the provisions of H.G. no. 681/2011 on the approval of the Doctoral Studies Code, with subsequent amendments and completions.
- bb) The request of IOSUD - UPB to start the evaluation procedure at CNATDCU level of the doctoral thesis, registered at MEC.
- cc) The doctoral student application for the issuance of the doctoral diploma also signed by the doctoral supervisor.



## Annex 9 Public Access to the Doctoral Thesis

- 1) The summary of the thesis is published on the IOSUD - UPB website after the issuance order for appointing the support committee, both in English and in Romanian.
- 2) The thesis in printed format can be consulted at the IOSUD - UPB library at least 20 days before the date set for public defense. The doctoral thesis remains a public document at the IOSUD - UPB library.
- 3) If the doctoral student does not opt for the distinct publication of the thesis or of some chapters from it, the digital form of the thesis is made public and can be freely accessed on the national platform after the issuance of the doctoral degree. A copyright protection license will be assigned to the doctoral thesis.
- 4) If the doctoral student opts for the distinct publication of the doctoral thesis or of some chapters from it, he / she receives a grace period of maximum 24 months for the accomplishment of this publication. After the expiration of the grace period, if no notification has been received at IOSUD - UPB regarding the distinct publication of the thesis, the document in digital format becomes freely accessible on the national platform with the assignment of a copyright protection license.
- 5) After the thesis publication or some chapters of it, the author has the obligation to notify IOSUD - UPB on this fact and to send the bibliographic indication and a link to the publication, which will then be made public on the national platform.
- 6) After granting the doctorate, within a maximum of 30 days, IOSUD - UPB has the obligation to send a printed copy of the doctoral thesis to the National Library of Romania, where it can be accessed upon request.