



PhD in Computer Science

Department of Computer Science

School of Sciences and Engineering

HANDBOOK OF REGULATIONS
AND PROCEDURES

March 2025

A HANDBOOK OF REGULATIONS AND PROCEDURES

This handbook contains the regulations and procedures relating to the PhD in Computer Science at the University of Nicosia. The Handbook is revised on a regular basis. Students should ensure that they are using the most up to date version. If you have any questions in relation to the Programme, please do not hesitate to contact the Department of Computer Science and the program coordinator.

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1. About this Booklet

This booklet has been written to provide you with a detailed guide to the PhD in Computer Science Program. It includes information on the admission requirements, program description, as well as the code of practice that you are advised to follow during your studies. Also included in this handbook is the list of faculty members teaching in the Computer Science programme.

You are advised to read it carefully as it encompasses all the required guidelines for following the appropriate procedures during your PhD studies. You should also consult the Academic Policies booklet and any other leaflet distributed by the Department of Academic Affairs in order to familiarise yourself with the academic rules, policies and regulations of the University.

2. Program description

The PhD Program requires the completion of at least 180 ECTS, allocated to the research proposal, the pilot study, the main study, data analysis and the thesis. The Programme has been structured into six (6) distinct phases (semesters), each consisting of 30 ECTS (see Programme Structure and Course Allocation to Semesters above).

3. Duration of Study

The minimum duration for completing the Doctoral Degree in Computer Science is three (3) years and the maximum is eight (8) years.

4. Program Objectives

The objective of the PhD programme is to advance students' in depth understanding and critical analysis of current theoretical literature and research methodology in the field of Computer Science, enhance students' research skills and facilitate the development of expertise relevant to their research specialization area. Additionally the program aims to advance students' understanding and application of suitable research methodologies and scientific methods providing them with skills to carry out their doctoral research project.

The Ph.D. in Computer Science programme will educate students on how to disseminate research findings, conclusions and suggestions through publishing in academic journals and/or presenting their work in academic conferences and seminars, and give students a broad understanding of research approaches and methods, which will enable them to read and comprehend a wide range of academic research papers to enhance their research competence and facilitate the development of future research activities.

Doctoral students are expected to design and execute an independent original research project and produce a Thesis (maximum 80,000 words). Through their research project students are expected to evidence an original contribution to knowledge, develop or apply innovative research and advance scientific knowledge in the area of Computer Science.

Specific aims of the program are to:

- Educate students in how to disseminate research findings, conclusions and suggestions, for example through publishing in academic journals and/or presenting their work in academic conferences and seminars,
- Give students a broad understanding of research approaches and methods, which will enable them to read and comprehend a wide range of academic research papers to enhance their research competence and facilitate the development of future research activities,
- Develop the skills to write-up and submit a research proposal to a funding agency and/or assist a faculty member with a grant proposal, prior to graduation.
- Enable students to independently acquire and interpret additional knowledge relating to research, and an understanding of the quality of work required to satisfy peer review for potential publications.
- Give students a broad understanding of research approaches and methods which will enable them to read and comprehend a wide range of academic research papers to enhance their research competence and facilitate the development of future research activities.

5. Program Learning Outcomes

By the end of the period of doctoral study, students are expected to:

- 1) Be specifically trained in case-analysis, project-setting and problem-solving contexts.
- 2) Acquire research skills and analytical competences to address the challenges posed by the processes of implementation and contextualization of the CS field of expertise
 - a. Be able to conceive, design, implement and adapt a substantial process of research;
 - b. Be capable of critical analysis, evaluation and synthesis of new and complex ideas.
- 3) Possess the competences and skills required for academic careers, as well as to advise and assist public and private organisations in the field of Computer Science
 - a. Communicate clearly and analytically using techniques derived from scientific practice in group meetings, presentations, lectures, written reports, and research papers
- 4) Be able to manage successfully all the stages of a research project, including designing, conducting and disseminating research in a way that is consistent with both professional practice and the standard principles of research practice and ethics.
- 5) Comprehend fundamental and advanced principles of research design, including an understanding of how to conceptualize penetrative research, formulate open-ended problems, and construct and test hypotheses by applying a range of research methods and tools.
- 6) Illustrate and critically evaluate research methods used in the field of Computer Science and prepare professional reports for the execution and management of an independent research study.
- 7) Be able to demonstrate originality in the application of knowledge, together with a practical understanding of how research and enquiry are used to create and interpret knowledge in their field.

- 8) Be able to manage successfully all the stages of a research project, including managing data, and conducting and disseminating research in a way that is consistent with both professional practice and the normal principles of research ethics.
- 9) Be able to explain and identify open problems and areas needing development in their fields.
- 10) Be able to act autonomously in the planning and implementation of research.
- 11) Develop skills in the dissemination of findings to the wider academic community, initially through writing-up their Thesis and then through publishing their work in academic journals and/or giving presentations in academic conferences and seminars.
- 12) Demonstrate a reflective approach to their research, professional development and application to their own area of practice.

6. Program Structure

The Program consists of 180 ECTS which are distributed to semesters as follows:

	SEMESTER	ECTS
Semester 1		
COMP-700	Research Seminars and Methodology	10
PHDP-100	Doctoral Proposal	20
Semester 2		
- Doctoral Course		30
Semester 3		
Doctoral Course		30
Semester 4		
Doctoral Course		30
<i>Peer reviewed publications are expected</i>		
Semester 5		
Doctoral Course		30
<i>Peer reviewed publications are expected</i>		
Semester 6		
-Write-up and Submission of Thesis		30
-Oral Defense		

7. Admissions Criteria

The PhD programme is available to holders of Master's degrees in Computer Science. Candidates with a computer science related Master's Degree and a strong Computer Science Bachelor's Degree will also be considered. To be admitted to the CS PhD program, there's a prerequisite to have a relevant degree with CS program or related to it MSc and BSc degrees. In cases where there is no MSc degree an additional year of studies (*ref. CYQAA distributed decision, February 2021*) at a PhD level (60 ECTS) are required following a formal decision from the DPPC of the department. Additionally, students may—at the discretion of the potential supervisor—complete a probation period of up to six months before admission. During this time, the applicant works with a selected or interested supervisor to receive guidance on whether and how to proceed with the PhD application, including relevant details and advice. The requirements are:

- (1) An accredited Bachelors degree*
- (2) An accredited Masters degree*
- (3) **Initial Research Proposal:** An initial proposal (4,000 – 6,000 words) outlining the research topic, aims and objectives, research questions and proposed research methodology as follows:
 - I. Title
 - II. Literature review (brief/well cited/substantiated)
 - III. Identifications of gaps in existing literature and rationale for proposed research
 - IV. Aims and objectives
 - V. Research hypotheses
 - VI. Research methodology
 - VII. Ethical Considerations (if applicable)
 - VIII. Expected output
 - IX. Time plan for completion
 - X. References
- (4) **Statement of Purpose:** Applicants are required to submit a comprehensive outline highlighting their academic and individual competencies and state why they believe

they are suitable for admission to the Programme, as well as their reflections regarding the expectations and value of the Programme for their personal advancement and career development.

- (5) **Letters of Recommendation:** Applicants must obtain two recommendation letters from individuals who have known the applicant in an educational and/or professional environment. At least one of the recommendation letters must be from an academic institution where the applicant has studied previously.
- (6) **English Language Proficiency:** TOEFL (paper based test 600, computer based test 250, internet based test 100) or IELTS 6.5. For students who graduated from an English speaking University, English language is not a requirement. Proficiency in English Language is an essential requirement even in cases where the thesis is to be submitted in Greek.
- (7) Previous theses/dissertations and any published work of academic relevance (if any).
- (8) **Application form:** Applicants must submit an application form for admission and enrolment to the programme. The application form requests general information about the applicant, their qualifications, relevant experience.

7.1 Deadlines for applicants

For Fall Admission:

Application Deadline: 30th April
Decisions: 31st May

For Spring Admission:

Application Deadline: 31st August
Decisions: 30th September

(9) Individual Interviews.

The criteria for admission to a postgraduate programme are among others:

1. relevance of the applicant's qualifications;
2. academic performance during the previous studies;
3. quality of CV and professional background;
4. performance during the interview (where is applicable) ;
5. quality of the research proposal;

6. availability of faculty.

The Department Doctoral Committee and the Director of Doctoral Programs, having examined the applicant's suitability against the entry criteria, having reviewed the application and interviewed the applicant, will determine his or her suitability and the appropriateness of their initial proposal.

Upon approval of the applicant and the initial proposal, the applicant may enroll in the Program.

An applicant may be admitted to the program subject to completing selected graduate courses offered by the Department, if so decided by the Department Graduate Studies Committee (DPPC). These courses will be in addition to the 180 ECTS required by the programme. Applicants who do not fulfil this requirement may still apply to the program subject to the evaluation of their academic qualifications by the Department Doctoral Program Committee. An additional year of studies is deemed necessary for these cases (ref. CYQAA; February 2021).

*At least one of the previous degrees (Bachelors or Masters) must be in Computer Science or other related disciplines. Applicants who do not hold a degree in a related disciplines will be evaluated and considered on an individual basis.

8. Internal processing (proposal/admission procedures)

There is a procedure that is followed for each incoming PhD application which is handled by the Admissions' department. The process for applying includes an online form <https://www.unic.ac.cy/apply/> where all the relevant details should be filled regarding your application etc. Once your application (including the research proposal outlining the research problem, presenting literature review and explaining the research methodology to be followed and accompanied by the required documents) will be received, it will be then considered for further examination by the Department's Committee. Your application will be initially assessed by Admissions' department, while it will be then assessed by the Doctoral Committee (i.e. Committee responsible to undertake the assessment of the submitted applications for the Computer Science department). Regarding the research proposal, the applicant needs to describe a novel-state of the art bibliographic study in his/her respective subject. Finally each applicant is responsible to search for a topic in the respective field of his/her interest.

9. Academic Standing

In order to be officially registered, students are required to submit for approval within 12 months to the Department Doctoral Committee, a Detailed Research Proposal (8K-10K words), which should include the following:

- Title
- Literature review (brief)
- Identifications of gaps in existing literature and rationale for proposed research
- Aim and objectives
- Research hypotheses
- Research methodology, data collection and analysis methods
- Ethical Considerations (if any)
- Expected output/impact
- Time plan for completion

- References

10. The Thesis

At the end of their studies, in order to be award the PhD degree, students are required to write a Thesis (80,000 words maximum) that presents in a coherent and academically appropriate manner the research project conducted, the findings and implications arising from the study.

There is no requirement to adopt a particular structure to the Thesis, but there are expectations with respect to the content of the Thesis. The Thesis must follow the style of the American Psychological Association publication guidelines. A typical Thesis structure is as follows:

Thesis Content and Description

Title

The Title should be clear, concise and must communicate to the reader the essence and focus of your project. It is advisable to formulate a working title at an early stage as it usually helps to focus the work.

Abstract

The Abstract is a concise statement of what you did and what you found as a result of your research project – it gives the essential points that emerge from your research, such as the rationale for the study your method, the key findings, and a conclusion that relates to the rationale. Although it appears at the beginning of your thesis, it is usually written last.

Chapter 1: Introduction

Chapter 1 serves as a starting point to the thesis and is an introduction to the topic for your readers. It should provide a clear rationale for the study and the context of the work and should also state the “research problem” in practical and theoretical terms.

Chapter 2: Literature Review

Chapter 2 should define the main terms of the study, present a concise and critical review of relevant literature and synthesize existing work in the field, whilst drawing out conceptual and methodological issues. The chapter should end with a discussion of identified gaps in the literature and a presentation of the research questions and hypotheses.

Chapter 3: Methodology (potentially or any other chapter title deemed appropriate)

The Methodology chapter presents and justifies the methodology chosen for the empirical part of the study. It is expected that the following sections will be included:

- a. Design
- b. Participants
- c. Materials
- d. Procedure

- e. Ethical considerations
- f. Statistical tests to be used to analyze the data

Chapter 4: Pilot Study and Preliminary Data Analysis (where applied)

This chapter describes the conceptualization, design and execution of the pilot study, as well as the preliminary data analysis.

Chapter 5: Main Study and Final Data Analysis (where applied)

This chapter describes the conceptualization, design and execution of the Main Study, and presents the main findings. A discussion of how the design of the Main Study was informed by the Pilot Study (e.g. changes in methodology or data analysis methods) is expected at the beginning of the chapter.

Chapter X: Any other K chapters deemed necessary (where applied)

Chapter X+K: Discussion

This chapter should start by interpreting your research findings in terms of the research problem and research questions. A discussion of the various findings in relation to the theoretical issues and literature outlined in the Literature Review should follow.

Chapter X+K+1: Conclusion

This is the final chapter, in which the contribution of the work should be summarized, and appropriate conclusions should be drawn. These may include implications for future research and practice, limitations of the project and suggestions for improvements if the study was to be repeated.

References

This section should include an exhaustive and accurate list of the literature mentioned in the thesis. It should be presented in ascending alphabetical order and using the APA style referencing system.

Appendices

The Appendices should include any useful information for the reader, which is redundant to the main text of the thesis, such as the Informed Consent Form and the Instruments that used to collect data (e.g. repositories, open data databases, potential questionnaires, interview schedules, observation schedules, tools etc). It is important to refer to any Appendices in the main text of the Thesis report so that the reader can consult them if necessary.

11. Policies and Procedures for Thesis

Policies

I. Committee composition and balance.

A PhD in Computer Science thesis committee is comprised of three doctoral level academics. One faculty member serves as the Chair of the thesis committee. The Chair must be a doctoral level academic who is a ranked member of the Department of Computer Science faculty (preferably Professor or Associate Professor). Two additional doctoral level faculty serve as thesis committee members. Ordinarily, both thesis committee members will be doctoral level academics who are ranked (Professors or Associate Professors) faculty members of the Department of Computer Science.

The Supervisory Team is a three-member committee appointed by the Department Postgraduate Programmes Committee (DPPC). The DPPC, in consultation with the student, first appoints the student's Main Supervisor, hereafter referred to as the Main Supervisor, and then the other two supervisors following the recommendation of the Main Supervisor. The committee is chaired by the Main Supervisor. The Main Supervisor and at least one other member of the committee are usually faculty members of the Department or School. The other member of the committee may be a faculty member from another Department or another University/Research Institute. A Main Supervisor cannot supervise at any time more than five (5) students.

At least one member of the Supervisory Team must have: 1) the rank of Professor or Associate Professor and 2) Doctoral Degree Completion.

Any team member without supervisory experience is encouraged to attend the doctoral supervision training workshops offered by the Office of the Vice Rector for Faculty and Research, under the series entitled "Research Skills and Development Program (RSDP)".

Committee chairs should work to insure that the committee has a composition suitable to maintain content and technical quality of the thesis. Such efforts might include (but not be limited to) selecting committee members with strengths in methodology, statistics, or other appropriate specializations.

II. Roles and responsibilities.

A. The responsibilities of the student include:

1. Working with the thesis chair and committee to develop and complete an original research project;
2. Working with the chair and committee to determine what is expected of the student;
3. Recognizing that it is the student's responsibility to make changes requested to the satisfaction of the thesis chair and committee;
4. Having thorough familiarity with all phases and components of the thesis project and the relevant literature;
5. Copy editing their own thesis in accordance with departmental requirements:
 1. Awareness of, and adherence to, timetables and deadlines;
 2. Keep a track of the progress on a weekly basis by sending a weekly report to the Main Supervisor (or as requested by the Main Supervisor).
7. Adherence to reading time requirements; and
8. Compliance with other requirements specified by the department, School of Sciences and Engineering, and/or the university (more generally).

B. The responsibilities of the thesis chair include:

1. Working with the student and thesis committee to develop an original and complete research project;
2. To determine that the thesis is of adequate quality for a proposal or defense;
3. Providing reasonable guidance to the student in the development of proposal, Ethics Committee requirements, design of study, data collection procedures, data analysis, and preparation of defense draft of thesis;
4. Providing guidance in selection of committee members;
5. Ensuring that modifications suggested by the committee (considered by the chair to be reasonable suggestions) are made by the student;
6. Monitoring post-defense revisions made by the student;
7. Providing reasonable assistance in copy editing (but not rewriting) the proposal and defense drafts; and
8. Providing a thorough reading of the proposal and defense drafts for major and minor flaws.

C. The responsibilities of the thesis committee include:

1. Working with the student and thesis chair to develop an original and complete research project;
2. Thorough reading of proposal and defense drafts for major and minor flaws as cold readers of what should be a nearly complete product; and

3. Indicating to the chair if the thesis is ready for proposal/defense meeting, and if not, providing general comments for improvement to the chair and student.

III. Special circumstances perceived by student

Often, students may perceive themselves to be in special circumstances due to situations related to personal finance, employment, medical or health concerns, or other circumstances; and believe that policies and procedures should be modified to respond to their special circumstances. In general, it is the responsibility of the student to meet deadlines and quality standards, and to engage in appropriate planning and time management to avoid such circumstances.

11.1 Procedures on the proposal and Doctoral Degree Thesis Defense

I. Pre-proposal / proposal meeting.

- A. When the chair and student decide that the thesis is ready to propose, a pre-proposal meeting may be scheduled with the entire committee. The purposes of the pre-proposal meeting is to provide to the committee members an opportunity to review the thesis proposal and to help determine if the proposal is developed to the extent that it is appropriate to propose. The main difference between the pre-proposal and proposal meeting is in the adequacy of the proposal's preparation. If the written proposal is adequate (as judged by the committee), the pre-proposal meeting may become a proposal meeting.
- B. An appropriately developed proposal should have, at a minimum, well written and appropriately formatted Introduction and Method chapters as well as a properly formatted Reference section. Page numbers, section headings, tables, margins, and so forth should be formatted in a manner consistent with APA formatting¹ (MLA references' style) and departmental guidelines. (see Appendix 1)
- C. It is expected that the pre-proposal meeting will begin with a conference between the chair and the committee to determine if the thesis draft is suitable for proposal. If there is a complete consensus that the thesis draft is suitable for proposal, the pre-proposal meeting may be upgraded to an official proposal meeting, and conducted accordingly.
- D. If any member of the committee feels that the thesis draft is not ready for proposal, the pre-proposal meeting continues. During the pre-proposal meeting, at the discretion of the chair and committee, there may be informal discussion during which committee members provide appropriate feedback or comments regarding improvements or changes needed to make the thesis draft ready for formal proposal.

¹ Please note: While the APA manual provides examples of how to cite common types of sources, it does not cover all conceivable sources. If you must cite a source that APA does not address, the APA suggests finding an example that is similar to your source and using that format. References' citation examples can be found to the University Library.

E. At the end of the meeting the committee may select any of the following decisions concerning the proposal:

(1) accept the proposal as presented or with minor revisions, (2) accept the thesis topic as a legitimate area for study, but proposal needs major revisions, (3) reject the proposal as an unacceptable area of study for the thesis, or (4) other decision as appropriate and approved by the chair and committee. In outcomes (2) or (3), another pre-proposal meeting must be scheduled

F. Once the student and the thesis chair have determined that part of an ongoing research project might serve as a thesis, committee members should be notified and the pre-proposal meeting should be held as soon as possible. Ethics Committee approval also is required (where applicable) prior to the gathering of thesis data.

II. Pre-defense / defense meeting.

A. When the chair and student decide that the thesis is ready for defense, a pre-defense meeting will be scheduled with the entire committee. The purpose of the pre-defense meeting is to give the committee members an opportunity to review the thesis and provide input as to whether the thesis is truly ready for defense. The main difference between the pre-defense and defense meeting is in the adequacy of the preparation of the thesis draft. If the thesis draft is adequately developed and appropriately formatted (as judged by the committee), the pre-defense meeting becomes the defense meeting.

B. To be ready for defense, a thesis should contain all relevant sections, typically: Cover sheet, table of contents, list of tables, abstract, the four chapters (i.e., Chapter I: Introduction, Chapter II: Method, Chapter III: Observations/Results, and Chapter IV: Discussion), references, and appendices, all presented in the appropriate format (i.e., consistent with departmental guidelines) as well as ALL the publications that were derived by the Thesis throughout the PhD studies.

C. It is expected that the pre-defense meeting will begin with a conference between the chair and the committee to determine if the thesis is truly ready to defend. If there is complete consensus that the thesis is ready, the defense may take place. If any member of the committee feels that the thesis is not ready, the defense may not continue. Rather, the meeting may continue as a pre-defense meeting or the chair may decide to receive written feedback from the committee regarding modifications needed for the thesis to be ready for defense. At the discretion of the chair and committee, the meeting may continue as a pre-defense meeting where committee members provide appropriate feedback or comments regarding improvements or changes needed to make the thesis ready to defend. When the recommended changes have been made and approved by the chair, another pre-defense meeting may be scheduled.

III. Doctoral Degree Thesis Defense

The Thesis defense includes the following stages:

- a. presentation of the Thesis in the form of a public lecture;
- b. oral examination (viva) of the student by the Examination Committee (members of the Supervisory Team, Doctorate Degree students, Research Advisors can attend the oral examination as observers only with the consent of the student);
- c. private deliberation of the Examination Committee and decision on the outcome of the exam;
- d. writing a detailed report substantiating the decision and the recommended outcome of the examination.

The possible outcomes of the examination are given in the next Section.

The oral examination (viva) is used to assess both the written submission and the candidate. It serves a number of different functions, such as:

- a. providing the student with the opportunity to defend the Thesis through high level debate with experts in the subject

- b. giving the examiners the opportunity to explore any doubts they may have about the material presented in the Thesis
- c. determining that the candidate is indeed the author of the written materials submitted
- d. enabling the examiners to check that the candidate has a thorough understanding of the theoretical framework, issues, methods and statistical analysis involved

Prior to the Thesis defense the following arrangements need to take place:

- a. Once the Thesis is submitted and the Examination Committee has been appointed, the Independent Chair of the Examination Committee sends the Thesis and the Regulations and Code of Practice for Postgraduate Programs to the two examiners;
- b. The date of the Thesis defense is set after consultation with the examiners and the student; the date should be within 3 months from the date that the Thesis was sent to the examiners;
- c. Each examiner is asked to write an independent preliminary report on the Thesis and submit it to the Chair at least ten days before the Thesis defense. Typically the preliminary report identifies particular areas which the examiner believes should be explored with the student during the oral examination, and, if possible, a tentative recommendation, based on an assessment of the Thesis, for the result of the examination. Tentative recommendations should not be indicated to the student in advance of the oral examination;
- d. The Chair sends to each examiner the other examiner's report after receiving both reports;
- e. If the examiners have any queries about the Thesis which they wish to raise with the supervisor in advance of the oral examination, they are at liberty to do so. If the examiners have any queries about the University's requirements for the award of the degree and about the regulations, they should raise them with the Chair of the Examination Committee. All matters relating to the examination are confidential and examiners should not contact any third party, other than the supervisor;

f. After the viva, the examiners draft a joint report explaining their decision which is subsequently submitted to the Department Postgraduate Programs Committee. This report is then forwarded to the Supervisory Team and the student.

11.2 Doctoral Degree Examination Outcomes

The possible outcomes of the examination are:

- a. UNCONDITIONAL PASS (student awarded the doctorate)
- b. CONDITIONAL PASS, subject to minor amendments to be completed and checked by one or both of the examiners within 3 months
- c. REVISION AND RESUBMISSION, which entails rewriting the Thesis and resubmitting it within 1 year
- d. FAIL

11.3 Supervision and Student Deliverables

Each PhD student's academic deliverables and research-related requirements are defined and overseen by their Main Supervisor. The responsibility for defining, communicating, and overseeing the academic deliverables of each PhD student lies primarily with the Main Supervisor. These deliverables may include, but are not limited to: publication of peer-reviewed research articles (*with the number of required publications determined through mutual agreement between the Main Supervisor and the student*), scheduled literature reviews, data collection phases, submission of research progress reports, completion of pilot studies, participation in relevant academic conferences, and other milestones aligned with the specific objectives of the student's research plan.

The scope, format, and timeline of such deliverables are established through early and ongoing consultation between the Main Supervisor and the student. This process ensures that expectations are transparent, tailored to the specific research idea/project/foundations, and consistent with the overall academic and research standards of the PhD program.

All PhD students must be made fully aware of these requirements at the beginning of their doctoral journey. Any updates or changes to these deliverables must be communicated clearly and in a timely manner by the Main Supervisor. The deliverables, as agreed between the student and the Main Supervisor, serve as a structured framework to guide the student's research activities and ensure alignment with the PhD proposal's objectives and timeline.

It is the duty of the Main Supervisor to monitor the student's progress on these deliverables, provide constructive feedback, and ensure that the student is meeting the expected standards. The Department Doctoral Program Committee (DPPC) may also be consulted in cases where deliverable expectations or timelines require further oversight or adjustment.

12. Other Issues / Additional Details

12.1 Teaching Assistant Opportunities

PhD students may be given the opportunity to serve as Teaching Assistants (TAs) in undergraduate or postgraduate courses offered by the Department of Computer Science. Eligible students may take on TA responsibilities after the completion of their second year of studies, subject to their willingness and availability. Such assignments are made in consultation with and upon agreement by the student's Main Supervisor, who ensures that the teaching duties are appropriate and do not interfere with the student's research progress. TA roles may include assisting in labs and/or leading discussion sessions, and are intended to support both the department's teaching needs and the student's academic development.

12.2 Ethics review.

Thesis research is reviewed for ethical considerations by the thesis committee, prior to the approval of a thesis proposal. Thesis research is also subject to the institution's rules and guidelines concerning ethical research.

12.3 Time for adequate review.

Thesis committee members should receive copies of the thesis proposal / pre-defense thesis draft at least two weeks prior to a scheduled pre-proposal / pre-defense meeting. In rare instances, provided the entire thesis committee agrees, the student may be allowed to distribute the relevant (pre-proposal or pre-defense) thesis draft to the committee less than two weeks before the scheduled (pre-proposal or pre-defense) committee meeting. However, in no case may the relevant draft be distributed less than 7 calendar days before the scheduled committee meeting.

13. Regulations and Procedures

The Doctor of Philosophy (PhD) degree in Computer Science is governed by the same rules regulations and procedures that govern all doctorate programs of the University. For detailed information candidates are advised to refer to the accompanied booklet of the University of Nicosia titled "*Regulations and Code Practice for Postgraduate Programmes*".

The relevant documents can be found on Moodle repository once you are admitted to the PhD program in Computer Science.

14. Computer Science Department Research Profile

The faculty of the Department of Computer Science are actively engaged in research and teaching in two disciplines: Computer Science and Mathematics. Within each of these disciplines, the Department has an extensive research activity in diverse subjects in core areas of the aforementioned disciplines. Faculty are heavily involved in all activities associated with research: scientific publications, instruction of research, reviewing and conference organizing, funded project coordination and participation.

KEY RESEARCH AREAS IN COMPUTER SCIENCE

Artificial Intelligence and Machine Learning/Data Mining

Research activities in this area include an extensive publication record and project participation in evidential reasoning, Bayesian Networks, Neural Networks, Computer Vision and Image Understanding. Faculty have been developing novel methodologies in the aforementioned areas, with machine learning applications on the Web, Social Media, Medical informatics and Geographic Information Systems. Finally, focus area include mining and learning from user generated data (Sentiment Analysis, Opinion Mining, Educational Data Mining, Computational Social Sciences, Behavior Pattern Mining) as well as Urban Data (Smart City data), Data Stream Mining and Multi-Label Learning.

Big Data Systems and Technologies

Faculty interests in this area include the research of fundamental concepts behind the design and development of scalable, self-adaptive and fault-tolerant indexing schemes for high-performance computing, distributed databases, and data-intensive processing engines to query and derive analytic insights from big data. To achieve economies of scale, satisfy low-latency requirements and preserve data privacy, faculty also examines how to deploy big data systems in distributed, mobile, cloud, and edge computing settings.

Mobile (Machine-to-Machine (M2M)) and Wearable Computing, Internet of Things (IoT) and Mobile Cloud Computing

Research deals with spatial and temporal scheduling applied in Mobile and Wireless systems as well as with the design and implementation of hybrid wireless testbed environments, including high performance Cloud and Mobile Cloud Computing (MCC) systems, modeling and simulation of mobile computing environments and development of new ‘green’ mobility-based protocols for IoT-enabled ecosystems. Research is broadly concerned with Mobile Computing and Peer-to-Peer communication systems as well as with Mobile Cloud Computing systems. Research activities in these fields include a dense publication record (including Books and Issues in leading publishers in the area) and project participation in the fields of Internet of Things (IoT), Wearable devices and related infrastructures for Smart Ambient Systems.

Security, Trust and Privacy

The research activities in this area are multifold and include formal trust and security management models in collaborative environments, applied security standards (ISO 27000 family), active defense mechanisms, attack profiling and data privacy frameworks. Novel research results have been published on the trust and security requirements for critical infrastructures and grid computing, the development of an integrated framework for active

defenses and attack profiling\visualization using open-source honeypots and the design and development principles of a GDPR-compliant privacy framework.

Middleware and Distributed Computing Systems

Research activities in this area include an extensive publication record and project participation in middleware such as status dissemination middleware and Grid computing middleware as well as in distributed systems in a variety of application domains such as medical data, active defense techniques (honeypots), cryptocurrency systems and data privacy. Prototypes of various systems in the areas above have been designed and developed, with a few being provided as open source.

Blockchain Technologies

Research in this domain is conducted into enhancements of the blockchain technology as well as usage of the technology as a building block for proposed frameworks. Research has been done into alternative ways of rewarding miners and the related topic of how to potentially "reuse" lost values within the blockchains. Research has also been conducted where blockchain technologies have been used as one of the building blocks in proposed frameworks. The usage of the blockchain aims to enhance trust in distrusted environment and provide more openness and transparency for the involved participants. Among proposed frameworks is the "Practical e-Voting Framework", which proposed numerous novel innovations using blockchain technologies to provide a more open and transparent election system.

Geometric Modeling (Computer Graphics)

This research includes Geometric Modeling, Spline methods, and Subdivision methods, for modelling articulated figures based on arbitrary topological meshes. The work has been supported by a number of research grants and has been published in various International Conference Proceedings and Journals.

Knowledge Management

The research interest in the area focuses on the successful implementation of knowledge management within a business. This involves analyzing critical success factors; examining best practices and lessons learned; investigating, developing and promoting modern technologies, etc. Special interest exists on the implementation of knowledge management in the educational sector.

Information and Communication Technologies (ICT) in Education

Research activities in the area involve the investigation, design, and implementation of ICTs in education. Consequently, the impact of ICTs on the learning activity is also examined. Examples of ICTs examined include Web 2.0, 3.0; Social networking – communities; Online learning; Various educational applications.

KEY RESEARCH AREAS IN MATHEMATICS

Numerical Solution of Partial Differential Equations

Faculty working in this area focus on the development, analysis and implementation of Numerical Methods for solving Partial Differential Equations modeling processes in Physics, Fluid Dynamics and Engineering. There is an extensive publication and project participation record which includes Galerkin Spectral Methods, Finite Difference Methods and Finite Element Methods which are used to solve a variety of problems ranging from Convective Flows in Microgravity to Electromagnetic Wave Propagation in Nematic Liquid Crystals.

Solitons

Faculty develop various numerical methods and algorithms for the investigation of problems which possess solitary wave solutions. The numerical methods and the algorithms are robust

and extremely efficient for problems of this kind. This allows researchers to investigate in detail several aspects of the physical properties of the model equations including soliton interactions.

Operator Theory and Applications

Research activities in the area of Operator Theory include a publication record on Reproducing kernels, Hilbert spaces and applications to Invariant Spaces of Function Spaces. Faculty has also published results on Hardy Classes and their Integral representation, using tools of Complex Analysis.

Estimation of Parameters in the Presence of Censored Data

Research activities in this area include publications and project participation in Medical Statistics such as survival of grafts in transplants and quality of life indices in Type II Diabetes patients.

Applied Statistical Modelling

Activities in this area involve presentation and participation in conferences and workshops and publications in academic journals and conference proceedings. The area of focus is on robust Generalized Linear Models, Measurements Error models and Monte Carlo Simulation models. Furthermore, links with the business world have been developed that allow such statistical models to be applied. Some areas of application are logistics, genetics and education.

15. Program faculty

The following is a list of the faculty members who have important roles in the PhD program. You may contact them by paying a personal visit to their office, or by telephone or by e-mail. Please note that each faculty member displays on the door of his/her office the student consultation hours during which he/she is available to see students and provide any help and assistance they may need. Alternative meetings can be arranged outside of these hours by contacting the lecturer. Please feel free to reach our faculty members at the University premises in order to provide you with the best support needed to be admitted and information on how to complete your studies.

Faculty Members

(only faculty who has as a minimum the rank of Assistant Professor may act as a main supervisor to a PhD Thesis)

Head of Department

Dr. Athena Stassopoulou

Professor



✉ stassopoulou.a@unic.ac.cy

📞 22841648,📍 main building B224

Areas of Specialization:

- Artificial Intelligence
- Bayesian Networks
- Machine Learning
- Computer Vision, Image Understanding
- Neural Networks
- Geographic Information Systems
- Applications of Artificial Intelligence on the web and in Medicine

Associate Head of Department

Dr. Ioanna Dionysiou

Associate Professor



✉ dionysiou.i@unic.ac.cy

📞 22841729,📍 main building B217

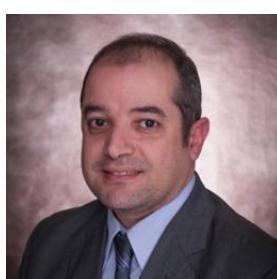
Areas of Specialization:

- Security: distributed security models, social network security, grid computing security, cloud computing security
- Trust: trust formalisms, trust management systems, trust models
- Critical Infrastructures Protection: power grid
- Applied Technology in Education

PhD program Coordinator and DPPC Chair

Dr. Constantinos Mavromoustakis

Professor



✉ mavromoustakis.c@unic.ac.cy

📞 22841730,📍 main building B217

Areas of Specialization:

- IoT
- Mobile Cloud Computing
- Spatiotemporal scheduling in Opportunistic Computing environments
- Metaheuristic scheduling techniques
- Internet Traffic Analysis
- Efficient Energy Saving Scheduling for Wireless Devices
- Mobile Computing Resource Management

- Socio-metrics and outsourcing in wireless devices

Dr. Dmitry Apraksin



✉ apraksine.d@unic.ac.cy

📞 22841585,📍 main building B105

Areas of Specialization:

- Computer Networks
- Database Management

Dr. George Chailos

Associate Professor



✉ chailos.g@unic.ac.cy

📞 2284166,📍 main building B218

Areas of Specialization:

- Analysis, Functional Analysis, Operator Theory: Theory of Banach Spaces, Hardy Classes, Cauchy type Integrals and Duality. Invariant subspaces of Banach spaces of analytic functions. Applications to Bergman spaces. Reproducing kernel Hilbert spaces.
- Foundations of Mathematics: Set theory and Logic.
- History and Philosophy of Mathematics

Dr. Charalambos Christou

Associate Professor



✉ chrstou.c@unic.ac.cy

📞 22841651,📍 main building B211

Areas of Specialization:

- Parallel Computers Shared Memory Multiprocessor Systems
- DSP-Based Parallel Processing
- E-Learning, Distance Learning, ICT

Areas of Specialization:

Dr. Harald Gjermundrød

Professor



✉ gjermundrod.h @unic.ac.cy
📞 22841729,📍 main building B224

- Distributed Computing Systems: Message-Oriented Middleware, Quality of Service, Distributed Algorithms
- Grid Computing: Grid Middleware, Grid Applications, Security and Trust in Grid Computing
- Applied Technology in Education: Software products using 3-Tier Web Architecture.

Dr. Ioannis Katakis
Associate Professor



✉ katakis.i@unic.ac.cy
📞 22841731,📍 main building B218

Areas of Specialization:

- Data Mining
- Machine Learning
- Mining Social Networks
- Data Stream Mining
- Sentiment Analysis
- Learning from Urban Data
- User Adaptation
- Multi-Label Learning
- User Personalization

Dr. Nectarios Papanicolaou
Professor



✉ papanicolaou.n@unic.ac.cy
📞 22841666,📍 main building B211

Areas of Specialization:

- Spectral, Finite-Difference and Finite-Element Methods for the Solution of Partial Differential Equations.
- Computational Fluid Mechanics.
- Numerical Analysis and Computational Mathematics.
- Numerical Analysis of Electromagnetic Wave Propagation in Liquid Crystals.
- Numerical Simulation of Modulated Photothermal Radiometric Signal from Semiconductors

Dr. George Portides
Assistant Professor

Areas of Specialization:

- Robust regression estimation
- Generalized Linear Models
- Computational Statistics



✉ portides.g@unic.ac.cy
☎ 22841653, 📍 main building B215

Dr. Philippou Pouyioutas

Professor



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☎ 22841572, 📍 main building A202

Dr. Andreas Savva

Associate Professor



✉ savva.a@unic.ac.cy
☎ 22841654, 📍 main building B215

Dr. Vasso Stylianou

Assistant Professor



✉ stylianou.v@unic.ac.cy
☎ 22841647, 📍 main building B217

Areas of Specialization:

- Databases: Database Applications in education, architecture, cultural heritage
- ICT Tools in Education
- Quality Assurance in Higher Education
- Social Networks and their implications

Areas of Specialization:

- Surface subdivision
- Splines
- Geometric Modelling
- Computer Graphics

Areas of Specialization:

- Knowledge Management
- ICT in Education
- E-Learning

Databases

Dr. Demetris Trihinas

Lecturer

[✉ trihinas.d@unic.ac.cy](mailto:trihinas.d@unic.ac.cy)

📞 22841792,📍 Millennium Building, M118d

Areas of Specialization:

- Big Data Analytics
- Data Mining
- Distributed Computing
- Cloud Computing
- Internet Computing

Other Departments' Faculty**Prof. John Sahalos (ECE)**

Professor

[✉ sahalos.j@unic.ac.cy](mailto:sahalos.j@unic.ac.cy)

📞 22367205

📍 Research and Technology Building

**Dr. Elias Iosif (Digital Innovation)**

Assistant Professor

[✉ iosif.e@unic.ac.cy](mailto:iosif.e@unic.ac.cy)

📞 22367208

📍 AGC Tower, 2nd Floor, 206

Adjunct Faculty

A number of Adjunct Faculty/Visiting faculty are co supervising as second or third co-supervisors our students, offering their experiences and their (where applied) different research cultures to our research students.

16. Infrastructure

The nature of the Computer Science Program and its courses requires that students spend considerable amount of their studying time in the computer laboratories, as well as in the library.

16.1 Research Labs

The Department of Computer Science has **3 research labs** engaging in state-of-the-art research in their respective field. The labs are headed by faculty of the Department and include a number of research associates and PhD Students.

- **Artificial Intelligence Laboratory**

The AI Lab of the Computer Science Department aims at developing cutting-edge technology as well as state-of-the art research on the fields of Artificial Intelligence, Machine Learning, and Data Science. It consists of professors, post-doctoral researchers, PhD students, as well as undergraduate students that conduct research and run projects related to a plethora of challenging topics like: Data Science (Data Stream mining, Deep Learning), Artificial Intelligence (Machine Learning, Uncertain Reasoning, Bayesian Networks), Smart Cities (Learning from Urban Data), Computational Social Science, Sentiment Analysis, Social Network Analysis. The team focuses on interdisciplinary topics working with external collaborators from Political Science, Social Science, Journalism and Health. On top of the research goals the group provides high-quality teaching on relevant topics (e.g. Artificial Intelligence, Data Mining, Machine Learning). It is headed by Prof Athena Stassopoulou and Dr Ioannis Katakis. More information on: <https://ailab.unic.ac.cy>

- **Mobile Systems Lab**

The Mobile Systems Lab (MoSys Lab) is a laboratory headed by Prof Constandinos Mavromoustakis under the Department of Computer Science engaged in the design, development, and evaluation of mobile networks, including wearables, sensor applications and networks (WSNs), MANETs, and VANETs and MP2P programmable implementations. The Lab has 3 research associates and a number of students working on locally-funded and EU projects. Some of the research directions are:

- Mobile and Wearable Computing and related technologies;

- Internet of Things (IoT), IoT for elderly people, Wearable devices (conventional and MP2P communication), research issues for these devices, i.e. localization etc.;
- IoT in Smart Ambient and Cyber-Physical Systems;
- Mobile Cloud-based Systems/Synchronous and Asynchronous Sync/Scheduling methodologies;
- Protocol development and deployment for large-scale heterogeneous networks;
- Mobile (M2M) and Wearable Computing and related technologies;
- Interconnection of IoT with social network environments (Multimedia transmission, Big data transfer);
- Mobile Cloud and IoT smart resource management;
- Wearables and related middlewares;
- Ambient assisted living platforms/architectures and applications.

Currently MOSYS lab has 3 research associates and 3 PhD students working in areas and fields relevant to the laboratory. For more information please visit <http://www.mosys.unic.ac.cy/>

- **Informatics Security Lab**

The Informatics Security Lab (ISL) (is part of the Computer Science department at University of Nicosia. Our mission is to improve the current state of security practices by exploring three pillars:

- Devising new techniques to detect cyberattacks by analyzing attack patterns and visualizing attack attempts in an intuitive manner.
- Delivering numerous university security courses, at both the BSc and MSc levels, including network security (BSc), cryptography and network security (MSc), ethical hacking (MSc), cyber warfare (MSc), network defense and countermeasures (MSc).
- Hosting seminars and talks to create public awareness on various aspects of security such as user security practices, security standards, etc. The ISL lab is headed by Dr. Ioanna Dionysiou and Prof. Harald Gjermundrød. For more information please visit: <http://isl.unic.ac.cy/>

16.2 Computer Laboratories

Several computer laboratories are operating around the campus of the University of Nicosia.

The main ones are situated in the Main and Millennium buildings, as follows:

- Main labs used in most programming courses: **B101, B111, B113 and A20** (main building). These are equipped with the latest hardware and software.
- Dedicated Computer Science laboratory for use by the Department's students only: **B110** (main building). This CS lab is equipped with iMacs and PCs.
- Dedicated **Virtual Reality Lab** (Millennium building): This lab is a state-of-the-art virtual, augmented and mixed reality technologies' facility. It includes two independent immersive VR installations and facilities for teaching including 16 high-end workstations.

You are strongly advised to utilise these resources in the best possible way, since it is very important that you gain practical experience. Please consult the laboratories' timetables displayed on each laboratory door in order to find out the times during which the labs are free and available for use.

16.3 Computer Center Support

The labs are managed by specialists and during the peak hours of operation trained assistants selected from senior Computer Science and Computer Engineering students, are on duty. The combination of excellent educational technology and professional management makes the learning environment rich and dynamic. If you require any further help, please contact the Computer Center Office which operates a users' support group and is located in Room B105 of the Main building.

16.4 Library Services

The University of Nicosia Library provides Computer Science students with the opportunity to have access to a large and wide range of computer books, magazines, journals and other related written material. Moreover, you can access e-books, CD-ROM and on-line databases

of information, as well as audio and video tapes. You are advised to take advantage of the resources available in our Library and use them extensively during your time at the University.

Appendix 1

Creating a Works Cited Page

With MLA style², you must include a Works Cited page at the end of your paper. A Works Cited page is an alphabetical listing of the resources cited in your paper. Below are some examples of MLA style citations.

Material Type	Works Cited
Book in print	Name Surname, Claudia Card, "The Atrocity Paradigm: A Theory of Evil". Oxford UP, 2005.
eBook	Name Surname, Milton Gaither, "Homeschool: An American History". Palgrave Macmillan, 2017. SpringerLink, doi-org.pitt.idm.oclc.org/10.1057/978-1-349-95056-0.
An article in a print journal	Name Surname, Julia Doggart. "Minding the Gap: Realizing Our Ideal Community Writing Assistance Program." <i>The Community Literacy Journal</i> , vol. 2, no. 1, 2007, pp. 71-80.
An article in an electronic journal	Name Surname, Name Surname, Name Surname, Name Surname and Name Surname ³ , "'Title.....'" <i>American Literature</i> , vol. 76, no. 4, 2004, pp. 833-869, doi: 123456789101112-3-4-5.
A encyclopedia entry	"Patanjali." <i>Benét's Reader's Encyclopedia</i> , edited by Bruce Murphy, 4th ed., HarperCollins Publishers, 1996, p. 782.
A government publication	United States, Federal Maritime Commission. <i>Hawaiian Trade Study: An Economic Analysis</i> . Government Printing Office, 1978.
An interview you conducted	Brandt, Deborah. Personal interview. 28 May 2008. (Note: List the interview under the name of the interviewee)

² Source can be found at: <https://pitt.libguides.com/citationhelp/mla8thedition> (last accessed on 24th of March 2021).

³ The last Name, Surname is followed after "and" clause; Ex. Name Surname, Name Surname, Name Surname, Name Surname **and** Name Surname, "'____Title____'" appears in XXXXXXXX, vol. 76, no. 4, 2020, pp. 833-869, doi: 123456789101112-3-4-5.

A film/DVD	Note: This depends on the focus of your work. Please see the MLA Style blog for a detailed explanation.
A Page on a Website with no author	"Stunning Lakeside View on Lake Erie." <i>VisitPA</i> , Commonwealth of Pennsylvania, 7 June 2018, www.visitpa.com/article/stunning-lakeside-views-lake-erie . (last accessed on day/month/year)
A Page on a Website with an author	Name Surname (if any) , "How Not to Kill Your Houseplants, According to Botanists." <i>Apartment Therapy</i> , 29 Jan. 2020, www.apartmenttherapy.com/houseplant-tips-botanists-36710191 . (last accessed on day/month/year) ⁴
Artwork - from website	Sherald, Amy. <i>Former First Lady, Michelle Obama</i> . 2018. <i>National Portrait Gallery</i> , npg.si.edu/object/npg_NPG.2018.15. (last accessed on day/month/year)

In-text Citation

Ex.: This argument has been developed elsewhere by [X].

X: is the number associated with the reference to be cited.

⁴ Note: Main Supervisors may require access dates for websites or other pieces of information. Please check with your Main Supervisor if you have any questions.

Roadmap

The Roadmap of the PhD

