

PLAN D'ÉTUDES 2024-2025

Doctorat en Systèmes d'information / PhD in Information Systems

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Information systems and services are an essential part of our everyday life, be it personal, social or professional. It is also an invaluable tool for businesses in support of their day-to-day processes, to gather business intelligence and reach strategic decisions and ultimately to foster digital innovation. At all levels public, private or international it is changing our lives.

The PhD program in Information Systems and Services Science is a cutting-edge program, where PhD students are expected to design, develop and evaluate several distinct scientific contributions implying fundamental models and theories in the discipline, and to prototype information systems and digital services of tomorrow. The research questions and scientific contributions of a PhD shall at least discuss information systems' and services' social and ethical as well as legal and economic implications, considered in the context of systems' sustainability.

Our areas of research cover digital health, pervasive computing, GIS, indoor positioning and indoor navigation, knowledge engineering, mobile sensors analysis, security and privacy, risk and compliance, Internet of Things, service innovation, formal methods and design, systems evolution, quality and interoperability, autonomous and self-adaptive systems, distributed artificial intelligence, complex systems modelling, trust-based systems, data science and predictive analysis, blockchain, virtual and augmented reality.

Application domains include: transdisciplinary business services, Ambient Assisted Living, services for mobile users, traveling and mobility, gaming, data protection, intelligent documents, digital rights and policy management, e-government services and smart society, finance and banking services, geo-data and smart buildings, smart energy management.

This PhD program is co-directed by faculty from the [Center for Informatics](#), which is an interfaculty center for research and teaching in computer science at the University of Geneva. It brings together all faculties involved in computer science research and teaching. Students enrolled in this PhD program are also automatically part of the [CUSO Doctoral School of Informatics](#).

We also welcome and value part-time Ph.D. students. For further information, please contact the program director.

More information: <https://www.unige.ch/gsem/en/programs/phd/information-systems/>

Program summary / Résumé du programme

The PhD program lasts maximum five years (10 semesters).

After their enrolment, PhD Students join a research laboratory led by their PhD supervisor and start working on their PhD thesis.

Thesis subject: PhD Students are required to submit their PhD thesis subject within the Scientific Committee's set deadline (but no later than four semesters after admission). The PhD thesis subject is presented orally and in writing to the PhD scientific committee for validation.

Annual progress evaluation: Each year, PhD students must provide an obligatory progress report and orally present their work to the PhD scientific committee, who will validate the progress and the continuation of the PhD.

PhD thesis discussion: PhD manuscripts should be submitted at the latest during the 9th semester. Within 3 months, the thesis committee and the PhD candidates will meet to discuss the thesis privately. At the end of this meeting, the thesis committee may request changes. The final PhD manuscript must be submitted within a fixed time limit not exceeding six months and not beyond the PhD study's maximum limit. Once the changes have been accepted, the final manuscript's public defence is scheduled.

PhD courses: A minimum of 24 ECTS has to be completed.

Core obligatory courses (6 credits)

During the first year, PhD Students must take a core course on research methods, scientific writing and presentation skills ('Design Science Research' course) accounting to 2 credits. During the first three years, PhD students need to complete: a course on basics of a written literature review, including an oral presentation of three scientific articles

relevant for the students' thesis ('State of the art cours'); and a course on basis of writing a quality scientific article on their research ('Writing Scientific Paper' cours). These courses are provided by the CUI.

Courses with similar content and effort (ECTS) to these can be taken at other venues; the PhD scientific committee must validate the alternative choice.

Enseignement	Code	Disc. / Thém.	Semestre	Hours/week	Crédits
Design science for research	D400004	Research Methods	A	2h	2
State of the art and article presentations	D400014	Soft Skills	AN	0 (self-paced)	2
Writing scientific paper	D400017	Soft Skills	AN	0 (self-paced)	2

Co-required courses (optional)

Depending on the background of the PhD student and the PhD thesis topic, the PhD scientific committee in collaboration with The PhD supervisor, may require the PhD student to attend 2 to 4 additional co-required courses to be completed within the first two years of the PhD.

For the students who will be involved in human subject studies during their PhD, a course provided by the University of Neuchâtel "Training and Resources in Research Ethics Evaluation" (elearning.trree.org) is required during the first year of a PhD program (3 credits, 1 credit per a module, unless specified differently by attestation).

Enseignement	Code	Disc. / Thém.	Semestre	Hours/week	Crédits
To be decided by the PhD scientific committee	-	--	AN	--	--

International workshops and conferences, collaborations, summer schools (min 6 credits)

- Active participation in internationally recognized scientific conferences in relevant research fields (original work must have been presented) (2 credits per conference, unless specified differently by attestation).
- Successful participation in scientific workshops or seminars offered by the University of Geneva or another recognized research-oriented university, in Switzerland or abroad (1 credit per full day, unless specified differently by attestation).
- Official visits abroad to other research institutions, lasting a minimum of one week (40h, visits supported by a formal invitation or SNSF funding) (2 credits per visit, unless specified differently by attestation).
- Participation in summer schools and hackathons (as specified by attestation).

Support for teaching at the institution (min 2 credits)

- Significant support in organizing workshops and scientific conferences (2 credits)
- Significant support in submitting a request for a research project, such as an application to the SNSF or for European Union research grants (2 credits)
- Significant support for a development of teaching program within the GSEM (2 credits)
- Significant support in the development of teaching cases or seminar material (2 credits)
- Teaching activities exceeding the tasks defined in the job description (1 credit per day)

Open science contributions (min 2 credits)

PhD students must be trained in the reproducibility and transparency of research by contributing original code, datasets or other artefacts to open repositories, ensuring that their findings can be independently verified and built upon by other researchers.

- Open code (via e.g., UNIGE GitLab) (2 credits)
- Open data (via e.g., YARETA.unige.ch) (2 credits)
- Open study protocols (peer-reviewed) (2 credits)
- Collaborative platforms, including citizens' science platforms (2 credits)

Advanced scientific seminars (min 5 days & 6 credits)

Before the completion of their PhD thesis, PhD students are required to attend at least 5 full days of one or more of the following advanced scientific seminars (such as those proposed by [CUSO Doctoral School of Informatics](#)) on an information systems topic, proposed at the University of the Geneva or organized by another established and research-oriented institution in Switzerland or abroad.

Enseignement	Code	Disc. / Thém.	Semestre	Days	Crédits
Participation to academic seminars (CUSO or similar)		Information Systems		5	

Public Engagement and Science Communication (min 2 credits)

PhD students must be trained in communicating research findings and their implications to the general public through web presence, blogs, social media, and public talks (0.5 credit per activity, unless specified differently by attestation).

Légende

A automne
P printemps
AN enseignement annuel
HF enseignement hors faculté. Se renseigner auprès de la faculté offrant l'enseignement.

Pour les descriptifs, les horaires et les dernières informations sur les enseignements non-donnés se référer au site web de la Faculté.