

# Computer Science (international joint programme with University of St Andrews)

## doctoral study programme, third Bologna cycle

### COURSE STRUCTURE of the study programme

The Computer Science and Informatics study programme lasts four years. The partner institutions, UP FAMNIT and University of St Andrews, jointly agree on the institution at which the student will complete each of the four years. The student must complete at least one year at each institution. The allocation of the remaining part of the programme (two years) is determined by the student in agreement with the supervisor. This decision must be approved by the Quality Assurance Committee of the joint doctoral study programme.

The programme consists of the following components:

- in-depth courses in computer science,
- individual research work,
- seminars,
- external elective courses,
- doctoral dissertation.

#### *In-depth courses in computer science*

In-depth courses in computer science represents one of the core specialized research areas of a doctoral student's study. These courses incorporate the latest developments in the field of computer science and informatics.

Students may attend these courses either within their enrolled study programme or within any comparable programme, subject to agreement with their mentor. In agreement with the mentor, and particularly in the case of interdisciplinary studies, these courses may also be selected from other academic disciplines. Students may choose an advanced course either from the set of postgraduate courses or arrange, in agreement with the supervisor and the course instructor, for the course to be delivered individually.

Each course is structured so that the lecturer introduces the topic in initial lectures, after which students further develop it through independent study of the literature (scientific articles) and the preparation of review papers. These are then presented within doctoral seminars, where discussion of the field is further developed.

The courses fall into one of the following areas:

- Selected topics in mathematical methods in computer science 1
- Selected topics in mathematical methods in computer science 2
- Selected topics in data structures and algorithms 1
- Selected topics in data structures and algorithms 2
- Selected topics in software development 1
- Selected topics in software development 2
- Selected topics in computer systems 1
- Selected topics in computer systems 2
- Selected topics in computer interactions 1
- Selected topics in computer interactions 2

### ***Seminars***

Within the framework of seminars, students present partial results of their research work. The results must be presented orally. The quality of the research results must be at a level that enables the student to publish one contribution per year at an appropriate conference or in a scientific journal. In the first year, this may be a national conference or journal, while in subsequent years it should be international.

As part of the seminar, students are also expected to attend the presentations of other students and actively participate in discussions.

### ***Individual research work***

Individual research work represents the student's scientific research on their doctoral topic, carried out under the supervision of and in collaboration with their supervisor.

### ***External elective course***

In the first and second year, students complete a total of two external elective courses amounting to 10 ECTS credits. These courses are intended to develop scientific research skills, such as communication in science, writing scientific texts, presenting scientific achievements to academic, professional, and general audiences, and understanding methodological principles for the design, analysis, and planning of experiments.

The following elective courses are accredited within the study program:

- Scientific skills - Design and analysis of planned experiments (5 ECTS-credits)
- Scientific skills - Scientific writing and presentation (5 ECTS-credits).

Students may also complete external elective courses at other faculties of the University of Primorska and at University of St Andrews.

At the University of St Andrews, such content is offered through the Centre for Academic, Professional and Organisational Development, which provides a wide range of lectures covering relevant topics (e.g., Getting Started Bundle, Carrying Out My Research Bundle, Dealing with My Data Bundle, Writing and Publishing Bundle, Finishing Up Bundle).

At the University of Primorska, Faculty of Management, students may choose courses such as Quantitative Research Methodology and Qualitative Research Methodology.

The suitability of selected external elective courses must be approved by the omission for the quality of implementation of the joint doctoral study program, provided that the selected course is aligned with the objectives of the study programme.

### ***Doctoral dissertation (PhD Thesis)***

The doctoral dissertation is an original contribution to science and must be prepared in accordance with the University PhD rules and regulations. Prior to the defence of the doctoral dissertation, the work must be published (or accepted for publication) in an international journal, specifically in at least one article in journals indexed in the SCI database. The student presents original research results at national and international conferences and in scientific journals. The doctoral dissertation may also take the form of a collection of related scientific contributions presented at national and international conferences. At least one of these contributions must be published following a rigorous peer-review process (either in a conference proceeding or in a journal).

In cases where contributions are published in international sources and the doctoral dissertation is not entirely written in English, the individual contributions may nevertheless be written in English.

The procedure for preparing a doctoral dissertation is regulated by the [Rules on the preparation and defence of the doctoral dissertation at the University of Primorska](#).

Table 1: Structure of the study programme

| Year of study | Study obligation                                | ECTS-credits (ECTS) |                    |
|---------------|-------------------------------------------------|---------------------|--------------------|
|               |                                                 | ECTS                | ECTS/Year of study |
| 1.            | External elective course                        | 5                   | 60                 |
|               | In-depth course in computer science I           | 9                   |                    |
|               | In-depth course in computer science II          | 9                   |                    |
|               | Individual research work                        | 31                  |                    |
|               | Seminar 1                                       | 6                   |                    |
| 2.            | External elective course                        | 5                   | 60                 |
|               | In-depth course in computer science III         | 9                   |                    |
|               | In-depth course in computer science IV          | 9                   |                    |
|               | Individual research work                        | 25                  |                    |
|               | Seminar 2                                       | 6                   |                    |
|               | Seminar 3                                       | 6                   |                    |
| 3.            | Individual research work                        | 54                  | 60                 |
|               | Seminar 4                                       | 6                   |                    |
| 4.            | Individual research work (doctoral disertation) | 54                  | 60                 |
|               | Seminar 5                                       | 6                   |                    |
| TOTAL         |                                                 | 240                 |                    |

Legend:

ECTS credits (ECTS) = credit points awarded under the European Credit Transfer and Accumulation System (ECTS). The credit system facilitates student mobility and the mutual recognition of completed academic requirements.

ECTS credits represent an average estimate of the time required to complete a course and include both organized forms of instruction (lectures, seminars, seminar and laboratory exercises, fieldwork, practical training, etc.) and the student's independent work (exam preparation and other course-related obligations, etc.). One (1) ECTS credit corresponds to 25 to 30 hours of study workload. Credits are awarded upon the successful completion of the requirements for an individual course.

For assistance and guidance, students may consult the study programme coordinator.

**Contact:**

Programme coordinator:

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