Courses of doctoral study

Total amount of credits for 8-semester’s doctoral degree is 240 credits. Courses are divided into required, selective and elective. Most of courses can be enrolled repeatedly (few exceptions), also with earning credits.

PhD students are involved in the activities of the faculty departments, in particular participation in scientific and educational tasks and activities as agreed with the supervisor and head of the department. Supervision on examinations and tests is recorded (required minimum of 10 hours per semester). The students' responsibilities also include the teaching of lectures for at least 1 semester. Key part is also student's activities in research laboratories.

Responsibility of students is to meet all the requirements defined by individual study plan (framework), which is approved by the Specialist Board. Student will be drawn it up with his/her supervisor before the beginning of the 1st semester. This plan includes the study phases, the dates for the examinations and tasks related to publishing in professional journals. Study plan is specified and added to the annual plan, which may be changed with the approval of supervisor and the Head of the Scientific Board. Fulfilment of that plan is controlled and evaluated by the Scientific Board in cooperation with the supervisor.

The condition for applying for the dissertation thesis defence is successful passing of the state doctoral examination, which includes the defence of theses, at least two reviewed publications in English and obtain at least 240 credits, of which 220 credits for completion of the required and selective courses (of which min. 185 credits for completion of required courses, of which 160 credits for course DPDIS). On the basis of passing of the state doctoral examination and successful dissertation thesis defence graduates are awarded with the academic degree Ph.D.

Specialist Board FI at its meeting on 25th January 2012 agreed the new courses (marked in red) with effect from spring semester 2012.
Field of Study INFORMATICS

Required courses:

**DPDIS**  Dissertation Preparation – 160 credits, subject with mobile credits (5-40 per semester, course can be enrolled repeatedly, number of credits should grow)

**DPUBL**  Preparation of Publication – 5 credits, at least two times per study

**DTEDI**  Thesis – 7 credits (credits are given for the thesis submission and passing the seminars of the course, courses can not be enrolled repeatedly)

**DCIPR**  A Lecture in a Foreign Language – 5 credits (on Seminar on Informatics IA068 or international conference)

**DPOMV**  Class-work Cooperation – 2-8 credits (2 credits per 1 hour of teaching per week, max 4 hours, preparation of lectures also possible – depends on supervisor, course is usually stipendiary 120,- CZK per 1 hour)

**DSZK**  State doctorate exam – 0 credit (can be repeated once, requirement for enrolment is passing courses DTEDI and DPUBL or DTEDI a DCIPR)

**DODIS**  Dissertation defence – 0 credit (can be repeated once)

**DUVOD**  Introduction to PhD study – 2 credits (mandatory for student of the 1st semester of doctoral study)

Selective courses:

**VV043**  Academic Writing in English – 5 credits (taught English)

**VV041**  English for Academic Purposes (post-graduate) – 2 credits (taught English)

**DZAST**  Internship Abroad – 5 credits per 1 month of internship (credits are confirmed by supervisor)

**DVBDP**  Diploma Thesis Supervision – 2-4 credits per semester (1 thesis = 2 credits), evaluation makes supervisor

**IA067**  Informatics Colloquium – 1 credit (lectures of prestigious specialists)

**FMDSA**  Seminar on Formal Models, Discrete Structures and Algorithms – 2 credits, (lectures of foreign guests)

**IA068**  Informatics Seminar – 2 credits (presentations about work of PhD students, DCIPR also possible)

**DPRPO**  Poster Preparation – 1 credit

The following courses include a work with the supervisor in the laboratory in a specific research group:

**DEMBSY**  Research Project in Embedded Systems – 3 credits

**DFOME**  Formal Methods in Theory and Practice – 3 credits

**DMKZI**  Quantum Information Processing Methods – 3 credits

**DPGZO**  Computer Graphics and Image Processing – 3 credits

**DMPOS**  Computer Networks Methods – 3 credits

**DMZDD**  Digital Data Processing Methods – 3 credits

**DPITS**  Enterprise IT Systems and Services – 3 credits

**DZPJUI**  Advanced Methods for Natural Language Processing and Artificial Intelligence – 3 credits

**DPOSO**  Advances in Concurrency – 3 credits

**DRPSEC**  Research Project in Computer Security – 3 credits

Example of elective courses:

**DEXTPR**  External Course (course of different university) – 3-9 credits (1 course = 3 credits), max 3 courses per study, evaluation makes supervisor

**PA018**  Advanced Topics in Information Technology Security – 2 credits (taught in English)

**IA075**  Quantum Seminar – 2 credits

**PA168**  Postgraduate Seminar on IT Security and Cryptography – 2 credits (taught in English)

**DSOKL**  Soft Skills – 8 credits

**DBLOK**  Lecture of Foreign Experts 2 – 4 credits (open as needed)
Field of Study COMPUTER SYSTEMS AND TECHNOLOGIES

Required courses:
DPDIS  Dissertation Preparation – 160 credits, subject with mobile credits (5-40 per semester, course can be enrolled repeatedly, number of credits should grow)
DPUBL  Preparation of Publication – 5 credits, at least two times per study
DTEDE  Thesis – 7 credits (credits are given for the thesis submission and passing the seminars of the course, courses can not be enrolled repeatedly)
DCIPR  A Lecture in a Foreign Language – 5 credits (on Seminar on Informatics IA068 or international conference)
DPOMV  Class-work Cooperation – 2-8 credits (2 credits per 1 hour of teaching per week, max 4 hours, preparation of lectures also possible – depends on supervisor, course is usually stipendiary 120,- CZK per 1 hour)
DSZK  State doctorate exam – 0 credit (can be repeated once, requirement for enrolment is passing courses DTEDE and DPUBL or DTEDE a DCIPR)
DODIS  Dissertation defence – 0 credit (can be repeated once)
DUVOD  Introduction to PhD study – 2 credits (mandatory for student of the 1st semester of doctoral study)

Selective courses:
VV043  Academic Writing in English – 5 credits (taught English)
VV041  English for Academic Purposes (post-graduate) – 2 credits (taught English)
DZAST  Internship Abroad – 5 credits per 1 month of internship (credits are confirmed by supervisor)
DVBDP  Diploma Thesis Supervision – 2-4 credits per semester (1 thesis = 2 credits), evaluation makes supervisor
IA067  Informatics Colloquium – 1 credit (lectures of prestigious specialists)
FMDSA  Seminar on Formal Models, Discrete Structures and Algorithms – 2 credits, (lectures of foreign guests)
IA068  Informatics Seminar – 2 credits (presentations about work of PhD students, DCIPR also possible)
DPRPO  Poster Preparation – 1 credit

The following courses include a work with the supervisor in the laboratory in a specific research group:
DEMBSY  Research Project in Embedded Systems – 3 credits
DFOME  Formal Methods in Theory and Practice – 3 credits
DMKZI  Quantum Information Processing Methods – 3 credits
DPGZO  Computer Graphics and Image Processing – 3 credits
DMPOS  Computer Networks Methods – 3 credits
DMZDD  Digital Data Processing Methods – 3 credits
DPITS  Enterprise IT Systems and Services – 3 credits
DZPJUI  Advanced Methods for Natural Language Processing and Artificial Intelligence – 3 credits
DPOSO  Advances in Concurrency – 3 credits
DRPSEC  Research Project in Computer Security – 3 credits

Example of elective courses:
DEXTPR  External Course (course of different university) – 3-9 credits (1 course = 3 credits), max 3 courses per study, evaluation makes supervisor
PA018  Advanced Topics in Information Technology Security – 2 credits (taught in English)
PA158  Advances in Computer Graphics – Seminar – 2 credits
PV188  Principles of Multimedia Processing and Transport – 2 credits (taught in English)
DSOKL  Soft Skills – 8 credits
DBLOK  Lecture of Foreign Experts 2 – 4 credits (open as needed)
Example of recommended study plan for student with dissertation topic *New Views on Creation of Cryptographic Protocols*:

**1st semester**
- Introduction to PhD study: required 2 credits
- Dissertation Preparation: required 5 credits
- Class-work Cooperation: required 6 credits
- Quantum Information Processing Methods: selective 3 credits
- Informatics Colloquium: selective 1 credit
- Informatics Seminar: selective 2 credits
- English for Academic Purposes (post-graduate): selective 2 credits
- Quantum seminar: elective 2 credits
- External Course: elective 3 credits

**2nd semester**
- Dissertation Preparation: required 10 credits
- Preparation of a Publication: required 5 credits
- A Lecture in a Foreign Language: required 5 credits
- Academic Writing in English: required 2 credits
- Quantum Information Processing Methods: selective 3 credits
- Informatics Colloquium: selective 1 credit
- Informatics Seminar: selective 2 credits
- Diploma Thesis Supervision: selective 2 credits

**3rd semester**
- Dissertation Preparation: required 15 credits
- Theses: required 7 credits
- Quantum Information Processing Methods: selective 3 credits
- Informatics Colloquium: selective 1 credit
- Informatics Seminar: selective 2 credits
- Diploma Thesis Supervision: selective 4 credits
- External Course: elective 3 credits

**4th semester**
- Dissertation Preparation: required 20 credits
- Quantum Information Processing Methods: selective 3 credits
- Informatics Colloquium: selective 1 credit
- Informatics Seminar: selective 2 credits
- State Doctoral Examination and Defence of theses: required 0 credits

**5th semester**
- Dissertation Preparation: required 30 credits
- Preparation of a Publication: required 5 credits
- Quantum Information Processing Methods: selective 3 credits

**6th semester**
- Dissertation Preparation: required 40 credits
- Quantum Information Processing Methods: selective 3 credits

**7th semester**
- Dissertation Preparation: required 40 credits

**8th semester**
- Internship abroad (3 months): selective 15 credits
- Dissertation Defence: required 0 credits

Total 256 credits - 190 required, 58 selective and 8 elective credits.