

# List of Doctoral Programme Course Units

## for the doctoral study program „Information Technology (IT)“

### Compulsory Course Units

| Course Unit                                                       | Garant<br>Lectures, alternative examiners                                                                                       |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>English Language</b><br>Angličtina                             | <u>Ing. Dagmar Svobodová, MSc.</u>                                                                                              |
| <b>Mathematics</b><br>Matematika                                  | <u>Prof. Ing. Roman Prokop, CSc.</u><br>RNDr. Martin Fajkus, Ph.D.<br>Ing. Pavel Martinek, Ph.D.<br>Mgr. Jana Řezníčková, Ph.D. |
| <b>Modern Theory of Information</b><br>Moderní teorie informatiky | <u>Assoc. Prof. Ing. Roman Šenkeřík, Ph.D.</u><br>prof. Mgr. Roman Jašek, Ph.D., DBA                                            |

### Compulsory Elective Course Units <sup>1</sup>

| Course Unit                                                                                      | Garant<br>Lectures, alternative examiners                                                                                         |
|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Selected Software Engineering Methods</b><br>Vybrané metody softwarového inženýrství          | <u>Assoc. Prof. Ing. Zdenka Prokopová, CSc.</u><br>prof. Mgr. Roman Jašek, Ph.D., DBA<br>Assoc. Prof. Ing. Radek Šilhavý, Ph.D.   |
| <b>Selected Optimization Methods</b><br>Vybrané optimalizační metody                             | <u>Prof. Ing. Roman Prokop, CSc.</u><br>Assoc. Prof. Ing. Libor Pekař, Ph.D.                                                      |
| <b>Modern Database Techniques</b><br>Moderní databázové techniky                                 | <u>Assoc. Prof. Ing. Zdenka Prokopová, CSc.</u><br>Assoc. Prof. Ing. Martin Sysel, Ph.D.<br>Assoc. Prof. Ing. Petr Šilhavý, Ph.D. |
| <b>Modelling and Simulation of Continuous Systems</b><br>Modelování a simulace spojitých systémů | <u>Assoc. Prof. Ing. František Gazdoš, Ph.D.</u><br>Assoc. Prof. Ing. Jiří Vojtěšek, Ph.D.                                        |
| <b>Bioinspired Optimisation Methods</b><br>Bioinspirované optimalizační metody                   | <u>Assoc. Prof. Ing. Roman Šenkeřík, Ph.D.</u><br>Assoc. Prof. Ing. Zuzana Oplatková Komínková, Ph.D.                             |
| <b>Discrete Event Simulation</b><br>Simulace diskrétních událostí                                | <u>Assoc. Prof. Ing. Bronislav Chramcov, Ph.D.</u><br>Assoc. Prof. Ing. Lubomír Vašek, CSc.                                       |

<sup>1</sup> The student chooses subjects from a set of compulsory elective course units following the topic of his/her dissertation.

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|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Multimedia Data Processing</b><br>Zpracování multimediálních dat                                                                         | <u>Assoc. Prof. Ing. Zuzana Oplatková Komínková, Ph.D.</u><br>Ing. Tomáš Sysala, Ph.D.<br>Assoc. Prof. Ing. Zdenka Prokopová, CSc.<br>Assoc. Prof. Ing. Petr Šilhavý, Ph.D. |
| <b>Advanced Signal Processing</b><br>Pokročilé zpracování signálů                                                                           | <u>Assoc. Prof. Ing. Marek Kubalčík, Ph.D.</u><br>Assoc. Prof. RNDr. Vojtěch Křesálek, CSc.                                                                                 |
| <b>Advanced Technologies of Information and Communication Systems</b><br>Pokročilé technologie ochrany informačních a komunikačních systémů | <u>prof. Mgr. Roman Jašek, Ph.D., DBA</u><br>doc. Ing. Roman Šenkeřík, Ph.D.<br>Ing. David Malaník, Ph.D.                                                                   |
| <b>Science of Cyber Security</b><br>Kybernetická bezpečnost                                                                                 | <u>Prof. Mgr. Roman Jašek, Ph.D., DBA</u><br>Assoc. Prof. Ing. Martin Hromada, Ph.D.<br>Assoc. Prof. Ing. Roman Šenkeřík, Ph.D.                                             |
| <b>Systems Engineering</b><br>Metody systémového inženýrství                                                                                | <u>Prof. Mgr. Roman Jašek, Ph.D., DBA</u><br>Assoc. Prof. Ing. Bronislav Chramcov, Ph.D.<br>Ing. Radek Vala, Ph.D.                                                          |
| <b>Advanced Concepts of Classification and Datamining</b><br>Pokročilé koncepty klasifikace a datové analýzy                                | <u>Assoc. Prof. Ing. Zuzana Oplatková Komínková, Ph.D.</u><br>Assoc. Prof. Ing. Roman Šenkeřík, Ph.D.                                                                       |
| <b>Modern Network Technologies and Operating Systems</b><br>Moderní síťové technologie a operační systémy                                   | <u>Assoc. Prof. Ing. Martin Sysel, Ph.D.</u><br>Assoc. Prof. Ing. Jiří Vojtěšek, Ph.D.                                                                                      |
| <b>Hardware, Interface and Programming Environment</b><br>Hardware, rozhraní a jejich programové prostředí                                  | <u>Assoc. Prof. Ing. Martin Sysel, Ph.D.</u><br>Ing. Tomáš Dulík, Ph.D.<br>Ing. Peter Janků, Ph.D.<br>Ing. Martin Pospíšilík, Ph.D.                                         |
| <b>Selected Subject of Specialization <sup>2</sup></b><br>Předmět oboru                                                                     | <u>Chair of Doctoral Studies Program Board</u><br>The examiner will be appointed by the chair of DSPB                                                                       |

<sup>2</sup> The subject of study proposed by the supervisor and approved by the chairman of the doctoral study program board (subject that is part of an accredited DSP at another university in the Czech Republic or abroad).