### COURSE OF STUDY: Computer Science Bachelor's degree spec. --- full-time programme 2015/2016W - 2018/2019W

**“Zmieniony przez 111/2015”**

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<tr>
<th>No.</th>
<th>Subject name</th>
<th>Code</th>
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#### SEMESTER 1

1. Programming Basics
   - INF1PPR
   - 10 ECTS

2. Linear Algebra and Analytic Geometry
   - INF1ALG
   - 6 ECTS

3. Calculus
   - INF1AMA
   - 6 ECTS

4. Introduction to Computer Science
   - INF1WSI
   - 4 ECTS

5. Logic for Computer Scientists
   - INF1LDS
   - 3 ECTS

6. Occupational Health, Safety and Ergonomics
   - INF1PBP
   - 1 ECTS

**TOTAL IN SEMESTER**

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#### SEMESTER 2

1. Object Oriented Programming
   - INF1PDB
   - 6 ECTS

2. Foundations of Electrotechnics and Electronics
   - INF1PEE
   - 5 ECTS

3. Discrete Mathematics
   - INF1MDY
   - 4 ECTS

4. Probabilistic Methods and Statistics
   - INF1MPK
   - 4 ECTS

5. Digital Circuit Engineering
   - INF1TCT
   - 4 ECTS

6. Software Development Tools
   - INF1NPT
   - 3 ECTS

7. Foreign Language 1
   - INF1G1
   - 2 ECTS

8. Introduction to Linux
   - INF1WSL
   - 2 ECTS

**TOTAL IN SEMESTER**

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#### SEMESTER 3

1. Algorithms and Data Structures
   - INF1ASD
   - 6 ECTS

2. Computer Organization and Architecture
   - INF1AKO
   - 5 ECTS

3. Databases
   - INF1BDA
   - 5 ECTS

4. Computer Networks
   - INF1SKD
   - 5 ECTS

5. Signal Processing
   - INF1PSI
   - 3 ECTS

6. Electronic Circuits and Measurements
   - INF1VET
   - 3 ECTS

7. Foreign Language 2
   - INF1G2
   - 2 ECTS

8. Gymnastics 1
   - INF1WF1
   - 1 ECTS

**TOTAL IN SEMESTER**

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#### SEMESTER 4

1. Web Applications Development
   - INF1WDB
   - 5 ECTS

2. Elective 1
   - INF1PZ1
   - 5 ECTS

3. Elective 2
   - INF1PZ2
   - 5 ECTS

4. Software Engineering
   - INF1OP
   - 4 ECTS

5. Operating Systems
   - INF1OSP
   - 4 ECTS

6. Artificial Intelligence
   - INF1INT
   - 4 ECTS

7. Foreign Language 3
   - INF1G3
   - 2 ECTS

8. Gymnastics 2
   - INF1WF2
   - 1 ECTS

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#### SEMESTER 5

1. Elective 3
   - INF1PZ3
   - 5 ECTS

2. Elective 4
   - INF1PZ4
   - 5 ECTS

3. Mobile Systems
   - INF1MSM
   - 5 ECTS

4. Teamwork Project 1
   - INF1TP1
   - 4 ECTS

5. Advanced Object-oriented Programming Techniques
   - INF1ZTP
   - 4 ECTS

6. Human-Computer Interaction
   - INF1KCI
   - 3 ECTS

7. Foreign Language 4
   - INF1G4
   - 2 ECTS

8. Database Systems
   - INF1SBD
   - 2 ECTS

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#### SEMESTER 6

1. Elective 5
   - INF1PZ5
   - 5 ECTS

2. Elective 6
   - INF1PZ6
   - 5 ECTS

3. Security of Computer Networks
   - INF1BSK
   - 4 ECTS

4. Teamwork Project 2
   - INF1PZ2
   - 4 ECTS

5. Wireless Networks
   - INF1SBE
   - 4 ECTS

6. Embedded Systems
   - INF1SWB
   - 4 ECTS

7. Foreign Language 5
   - INF1G5
   - 2 ECTS

8. Graduation Seminar 1
   - INF1SD1
   - 2 ECTS

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#### SEMESTER 7

1. Engineering Thesis
   - INF1PDU
   - 12 ECTS

2. Internship
   - INF1GIO
   - 7 ECTS

3. Computer Graphics
   - INF1GIO
   - 3 ECTS

4. no English name yet!
   - INF1PAK
   - 3 ECTS

5. Academic Entrepreneurship
   - INF1SD2
   - 2 ECTS

6. Graduation Seminar 2
   - INF1SD2
   - 2 ECTS

7. Protection of Intellectual Property Rights
   - INF1OWI
   - 1 ECTS

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Elective courses (71 ECTS - 34 %)

- Engineering Thesis (12 ECTS)
- Internship (7 ECTS)

Administrator Internship (INF1PZA), Programist Internship (INF1PZP),

- Web Applications Development (5 ECTS)

Web Applications Development in Java (INF1PAW), Web Applications Development in .NET technology (INF1NET), Open Source Frameworks for Rapid Application Development (INF1RST),

- Teamwork Project 1 (4 ECTS)

Teamwork project - desktop application 1 (INF1PZAD1), Teamwork project - web application 1 (INF1PZAI1), Teamwork project - mobile application 1 (INF1PZAM1),

- Teamwork Project 2 (4 ECTS)

Teamwork project - desktop application 2 (INF1PZAD2), Teamwork project - web application 2 (INF1PZAI2), Teamwork project - mobile application 2 (INF1PZAM2),

- Elective 1 (5 ECTS)

Linux Administration (INF1AGL), Algorithmic Modelling of Random Phenomenons (INF1AMZ), Applied Graph and Network Algorithms (INF1AGS). Image Analysis (INF1ADB), ASP MVC Web Applications (INF1MVC), Systems architecture (INF1ASO), Database Security (INF1BBD), Building Desktop Applications using WPF (INF1BAU), Biometrics (INF1BPI), Bussiness Application Programming in Java (INF1BAB), Programming in JavaScript (INF1BJS), Web Applications Development in Java (INF1BAJ), Web Applications Development in .NET technology (INF1BNT), SoC design (INF1BSC), Audiosvisual content processing in multimedia systems (INF1BTA), Open Source Frameworks for Rapid Application Development (INF1BRT), Virtual Reality (INF1BVR), Groupware Systems (INF1BPS), Development of Database-Driven Applications (INF1BTA), Selected Topics of Discrete Mathematics and Their Applications in Computer Science (INF1BZW), Advanced Programming Techniques (INF1ZPP), Investment Portfolio Management (INF1ZPP),

- Elective 2 (5 ECTS)

Linux Administration (INF1AGL), Algorithmic Modelling of Random Phenomenons (INF1AMZ), Applied Graph and Network Algorithms (INF1AGS). Image Analysis (INF1ADB), ASP MVC Web Applications (INF1MVC), Systems architecture (INF1ASO), Database Security (INF1BBD), Building Desktop Applications using WPF (INF1BAU), Biometrics (INF1BPI), Bussiness Application Programming in Java (INF1BAB), Programming in JavaScript (INF1BJS), Web Applications Development in Java (INF1BAJ), Web Applications Development in .NET technology (INF1BNT), SoC design (INF1BSC), Audiosvisual content processing in multimedia systems (INF1BTA), Open Source Frameworks for Rapid Application Development (INF1BRT), Virtual Reality (INF1BVR), Groupware Systems (INF1BPS), Development of Database-Driven Applications (INF1BTA), Selected Topics of Discrete Mathematics and Their Applications in Computer Science (INF1BZW), Advanced Programming Techniques (INF1ZPP), Investment Portfolio Management (INF1ZPP),

- Elective 3 (5 ECTS)

Linux Administration (INF1AGL), Algorithmic Modelling of Random Phenomenons (INF1AMZ), Applied Graph and Network Algorithms (INF1AGS). Image Analysis (INF1ADB), ASP MVC Web Applications (INF1MVC), Systems architecture (INF1ASO), Database Security (INF1BBD), Building Desktop Applications using WPF (INF1BAU), Biometrics (INF1BPI), Bussiness Application Programming in Java (INF1BAB), Programming in JavaScript (INF1BJS), Web Applications Development in Java (INF1BAJ), Web Applications Development in .NET technology (INF1BNT), SoC design (INF1BSC), Audiosvisual content processing in multimedia systems (INF1BTA), Open Source Frameworks for Rapid Application Development (INF1BRT), Virtual Reality (INF1BVR), Groupware Systems (INF1BPS), Development of Database-Driven Applications (INF1BTA), Selected Topics of Discrete Mathematics and Their Applications in Computer Science (INF1BZW), Advanced Programming Techniques (INF1ZPP), Investment Portfolio Management (INF1ZPP),

- Elective 4 (5 ECTS)

Linux Administration (INF1AGL), Algorithmic Modelling of Random Phenomenons (INF1AMZ), Applied Graph and Network Algorithms (INF1AGS). Image Analysis (INF1ADB), ASP MVC Web Applications (INF1MVC), Systems architecture (INF1ASO), Database Security (INF1BBD), Building Desktop Applications using WPF (INF1BAU), Biometrics (INF1BPI), Bussiness Application Programming in Java (INF1BAB), Programming in JavaScript (INF1BJS), Web Applications Development in Java (INF1BAJ), Web Applications Development in .NET technology (INF1BNT), SoC design (INF1BSC), Audiosvisual content processing in multimedia systems (INF1BTA), Open Source Frameworks for Rapid Application Development (INF1BRT), Virtual Reality (INF1BVR), Groupware Systems (INF1BPS), Development of Database-Driven Applications (INF1BTA), Selected Topics of Discrete Mathematics and Their Applications in Computer Science (INF1BZW), Advanced Programming Techniques (INF1ZPP), Investment Portfolio Management (INF1ZPP),

- Elective 5 (5 ECTS)

Linux Administration (INF1AGL), Algorithmic Modelling of Random Phenomenons (INF1AMZ), Applied Graph and Network Algorithms (INF1AGS). Image Analysis (INF1ADB), ASP MVC Web Applications (INF1MVC), Systems architecture (INF1ASO), Database Security (INF1BBD), Building Desktop Applications using WPF (INF1BAU), Biometrics (INF1BPI), Bussiness Application Programming in Java (INF1BAB), Programming in JavaScript (INF1BJS), Web Applications Development in Java (INF1BAJ), Web Applications Development in .NET technology (INF1BNT), SoC design (INF1BSC), Audiosvisual content processing in multimedia systems (INF1BTA), Open Source Frameworks for Rapid Application Development (INF1BRT), Virtual Reality (INF1BVR), Groupware Systems (INF1BPS), Development of Database-Driven Applications (INF1BTA), Selected Topics of Discrete Mathematics and Their Applications in Computer Science (INF1BZW), Advanced Programming Techniques (INF1ZPP), Investment Portfolio Management (INF1ZPP),

- Elective 6 (5 ECTS)

Linux Administration (INF1AGL), Algorithmic Modelling of Random Phenomenons (INF1AMZ), Applied Graph and Network Algorithms (INF1AGS). Image Analysis (INF1ADB), ASP MVC Web Applications (INF1MVC), Systems architecture (INF1ASO), Database Security (INF1BBD), Building Desktop Applications using WPF (INF1BAU), Biometrics (INF1BPI), Bussiness Application Programming in Java (INF1BAB), Programming in JavaScript (INF1BJS), Web Applications Development in Java (INF1BAJ), Web Applications Development in .NET technology (INF1BNT), SoC design (INF1BSC), Audiosvisual content processing in multimedia systems (INF1BTA), Open Source Frameworks for Rapid Application Development (INF1BRT), Virtual Reality (INF1BVR), Groupware Systems (INF1BPS), Development of Database-Driven Applications (INF1BTA), Selected Topics of Discrete Mathematics and Their Applications in Computer Science (INF1BZW), Advanced Programming Techniques (INF1ZPP), Investment Portfolio Management (INF1ZPP),

- no English name yet ! (3 ECTS)

History of Mathematics (INF1HMA), Negotiations (INF1NEG), Psychology (INF1PSY), Introduction to Classical Music (INF1WMP),

- Graduation Seminar 1 (2 ECTS)
- Graduation Seminar 2 (2 ECTS)
- Gymnastics 1 (1 ECTS)
- Gymnastics 2 (1 ECTS)