

Academic year 2019-2020
Bachelor studies in Computer Science

Year 1 (Series 2019-2022)

Semester 1

CS1101	Data Structures C: 2 S: 1 L: 1 Ex: E Course description Course webpage	6 ECTS
CS1102	Computer Architecture and Operating Systems C: 2 S: L: 2 Ex: E Course description Course webpage	5 ECTS
CS1103	Logics for Computer Science C: 2 S: 2 L: Ex: E Course description Course webpage	6 ECTS
CS1104	Mathematics C: 2 S: 2 L: Ex: E Course description Course webpage	5 ECTS
CS1105	Practice - Introduction to Programming C: 1 S: L: 2 Ex: EVP Course webpage	4 ECTS
CS1106	English Language I C: S: 2 L: Ex: EVP Course description	4 ECTS

Supplementary courses

CS1113F	Competitive Programming I C: 1 S: 3 L: Ex: EVP	3 ECTS
CS1114F	Physical Education C: S: 1 L: Ex: EVP	1 ECTS
	Educational Psychology C: 2 S: 2 L: Ex: E	5 ECTS

Semester 2

CS1207	Object - Oriented Programming C: 2 S: L: 2 Ex: E Course description Course webpage	6 ECTS
CS1208	Operating Systems C: 2 S: L: 2 Ex: E Course description Course webpage	6 ECTS

CS1209	Algebraic Foundations of Computer Science C: 2 S: 2 L: Ex: E Course description Course webpage	5 ECTS
CS1210	Probabilities and Statistics C: 2 S: 1 L: 1 Ex: EVP Course description Course webpage	4 ECTS
CS1211	Algorithms Design C: 2 S: 2 L: Ex: E Course description Course webpage	5 ECTS
CS1212	English Language II C: S: 2 L: Ex: EVP Course description	4 ECTS

Supplementary courses

CS1215F	Competitive Programming II C: 1 S: 3 L: Ex: EVP	3 ECTS
CS1216F	Physical Education C: S: 1 L: Ex: EVP	1 ECTS
CS1117F	Ethics and academic integrity C: 1 S: L: Ex: EVP Course description	3 ECTS
	Pedagogy I (Foundations of pedagogy + Evaluation Theory and methodology) C: 2 S: 2 L: Ex: E	5 ECTS

Year 2 (Series 2018-2021)

Semester 1

CS2101	Computer Networks C: 2 S: L: 2 Ex: E Course description Course webpage	6 ECTS
CS2102	Databases C: 2 S: L: 2 Ex: E Course description Course webpage	6 ECTS
CS2103	Formal Languages, Automata and Compilers C: 2 S: L: 2 Ex: E Course description	5 ECTS
CS2104	Graph Algorithms C: 2 S: 2 L: Ex: E Course webpage	5 ECTS

Optional course 1 4 ECTS
C: 2 S: L: 2 Ex: EVP

CS2105O1 *Computability, Decidability and Complexity*
[Course description](#)

CS2105O2 *Principles of Programming Languages*
[Course description](#)

CS2105O3 *Genetic Algorithms*

CS2105O4 *Continuous Models and MATLAB*

CS2106 **English Language III** 4 ECTS
C: S: 2 L: Ex: EVP
[Course description](#)

Supplementary courses

CS2113F **Competitive Programming III** 3 ECTS
C: 1 S: 3 L: Ex: EVP

CS2114F **Physical Education** 1 ECTS
C: S: 1 L: Ex: EVP

CS2115F **Industry Training I** 3 ECTS
C: S: L: 2 Ex: EVP

Pedagogy II (Instruction theory and methodology + Evaluation theory and methodology) 5 ECTS
C: 2 S: 2 L: Ex: E

Semester 2

CS2207 **WEB Technologies** 6 ECTS
C: 2 S: L: 2 Ex: E
[Course webpage](#)

CS2208 **Advanced Programming** 5 ECTS
C: 2 S: L: 2 Ex: E
[Course description](#)

CS2209 **Software Engineering** 6 ECTS
C: 2 S: L: 2 Ex: E
[Course description](#) [Course webpage](#)

CS2210 **DBMS Practice** 4 ECTS
C: 1 S: L: 2 Ex: EVP
[Course description](#) [Course webpage](#)

Optional course 2 5 ECTS
C: 2 S: L: 2 Ex: E

CS2211O1 *Functional Programming*
[Course webpage](#)

CS221103 *Introduction to Cryptography*
[Course description](#) [Course webpage](#)

CS221104 *Entrepreneurship and Innovation in IT*

CS221105 *Embedded systems*

CS2212 **English Language IV** 4 ECTS

C: S: 2 L: Ex: EVP

[Course description](#)

Supplementary courses

CS2213F **Competitive Programming IV** 3 ECTS

C: 1 S: 3 L: Ex: EVP

CS2214F **Physical Education** 1 ECTS

C: S: 1 L: Ex: EVP

Teaching Techniques for Computer Science 5 ECTS

C: 2 S: 2 L: Ex: E

Year 3 (Series 2017-2020)

Semester 1

CS3101 **Machine Learning** 6 ECTS

C: 2 S: 2 L: Ex: E

[Course description](#)

CS3102 **Information Security** 5 ECTS

C: 2 S: L: 2 Ex: E

[Course description](#) [Course webpage](#)

CS3103 **Artificial Intelligence** 6 ECTS

C: 2 S: L: 2 Ex: E

[Course description](#) [Course webpage](#)

Optional course 3 4 ECTS

C: 2 S: L: 2 Ex: EVP

CS3104O1 *Introduction to .NET*

[Course description](#)

CS3104O2 *Physical systems development using microprocessors*

[Course webpage](#)

CS3104O3 *Neural networks*

[Course description](#) [Course webpage](#)

CS3104O4 *3D computer animation: fundamental algorithms and techniques*

[Course description](#) [Course webpage](#)

Optional course 4 5 ECTS
C: 2 S: L: 2 Ex: E

CS3105O1 *Probabilistic programming and modeling*
[Course description](#) [Course webpage](#)

CS3105O2 *Full-Stack Web Development*

CS3105O3 *Special Chapters in Operating Systems*
[Course description](#)

CS3105O4 *Automotive specific software engineering*

CS3106 **Practice - Python Programming** 4 ECTS
C: 1 S: L: 2 Ex: EVP
[Course description](#)

Supplementary courses

CS3113F **Competitive Programming V** 3 ECTS
C: 1 S: L: 3 Ex: EVP

CS3214F **Industry Training II** 3 ECTS
C: S: L: 2 Ex: EVP

Computer Assisted Education 2 ECTS
C: 1 S: 1 L: Ex: CO

Teaching Traineeship 1 (compulsory pre-higher education) 3 ECTS
C: S: 3 L: Ex: CO

Semester 2

CS3207 **Numerical Calculus** 4 ECTS
C: 2 S: L: 2 Ex: EVP
[Course description](#) [Course webpage](#)

CS3208 **Computer Graphics** 4 ECTS
C: 2 S: L: 2 Ex: EVP
[Course description](#) [Course webpage](#)

Optional course 5 5 ECTS
C: 2 S: L: 2 Ex: E

CS3209O1 *Rule-based Programming*
[Course description](#) [Course webpage](#)

CS3209O2 *Programming Techniques on the Android Platform*
[Course description](#)

CS3209O3 *Computational Aspects on the Number Theory*
[Course description](#) [Course webpage](#)

Optional course 6

6 ECTS

C: 2 S: L: 2 Ex: E

CS321001 *Psychology of the Professional Communication in IT industry*CS321002 *Cloud Computing*[Course description](#) [Course webpage](#)CS321003 *Techniques of natural language engineering*CS321004 *Social Media Networks Analysis*[Course description](#) [Course webpage](#)**Optional course 7**

6 ECTS

C: 2 S: L: 2 Ex: E

CS321005 *Petri Nets and Applications*[Course description](#)CS321006 *Smart Cards and their Applications*[Course description](#) [Course webpage](#)CS321007 *Special Topics on .NET programming*CS3212 **Diploma Project Development**

5 ECTS

C: S: L: 4 Ex: EVP

Supplementary coursesCS3213F **Competitive Programming VI**

3 ECTS

C: 1 S: 3 L: Ex: EVP

Class management

3 ECTS

C: 1 S: 1 L: Ex: E

Teaching Traineeship 2 (compulsory pre-higher education)

2 ECTS

C: S: 3 L: Ex: CO