

**Academic year 2020-2021**  
**Bachelor studies in Computer Science**

**Year 1 (class 2020-2023)**

**Semester 1**

*Compulsory courses*

CS1101	<b>Data Structures</b> C: 2 S: 1 L: 1 Ex: E <a href="#">Course webpage</a>	6 ECTS
CS1102	<b>Computer Architecture and Operating Systems</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course webpage</a>	5 ECTS
CS1103	<b>Logics for Computer Science</b> C: 2 S: 2 L: 0 Ex: E <a href="#">Course webpage</a>	6 ECTS
CS1104	<b>Mathematics</b> C: 2 S: 2 L: 0 Ex: E <a href="#">Course webpage</a>	5 ECTS
CS1105	<b>Practice - Introduction to Programming</b> C: 2 S: 0 L: 2 Ex: EVP <a href="#">Course webpage</a>	4 ECTS
CS1106	<b>English Language I</b> C: 0 S: 2 L: 0 Ex: EVP <a href="#">Course description</a>	4 ECTS

*Supplementary courses*

CS1113F	<b>Competitive Programming</b> C: 1 S: 3 L: 0 Ex: EVP	3 ECTS
CS1114F	<b>Physical Education</b> C: 0 S: 1 L: 0 Ex: EVP	1 ECTS

**Semester 2**

*Compulsory courses*

CS1207	<b>Object - Oriented Programming</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course webpage</a>	6 ECTS
CS1208	<b>Operating Systems</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course description</a>	6 ECTS

CS1209	<b>Algebraic Foundations of Computer Science</b> C: 2 S: 2 L: 0 Ex: E <a href="#">Course description</a>	5 ECTS
CS1210	<b>Probabilities and Statistics</b> C: 2 S: 1 L: 1 Ex: EVP <a href="#">Course description</a>	4 ECTS
CS1211	<b>Algorithms Design</b> C: 2 S: 2 L: 0 Ex: E <a href="#">Course webpage</a>	5 ECTS
CS1212	<b>English Language II</b> C: 0 S: 2 L: 0 Ex: EVP <a href="#">Course description</a>	4 ECTS

*Supplementary courses*

CS1215F	<b>Competitive Programming</b> C: 1 S: 3 L: 0 Ex: EVP	3 ECTS
CS1216F	<b>Physical Education</b> C: 0 S: 1 L: 0 Ex: EVP	1 ECTS
CS1117F	<b>Ethics and academic integrity</b> C: 1 S: 0 L: 0 Ex: EVP <a href="#">Course description</a>	3 ECTS

**Year 2 (class 2019-2022)**

**Semester 1**

*Compulsory courses*

CS2101	<b>Computer Networks</b> C: 2 S: 0 L: 2 Ex: EVP <a href="#">Course webpage</a>	6 ECTS
CS2102	<b>Databases</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course webpage</a>	6 ECTS
CS2103	<b>Formal Languages, Automata and Compilers</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course webpage</a>	5 ECTS
CS2104	<b>Graph Algorithms</b> C: 2 S: 2 L: 0 Ex: E <a href="#">Course webpage</a>	5 ECTS
CS2106	<b>English Language III</b> C: 0 S: 2 L: 0 Ex: EVP <a href="#">Course description</a>	4 ECTS

*Optional courses: 1 out of 4*

CS210501	<b>Computability, Decidability and Complexity</b> C: 2 S: 0 L: 2 Ex: EVP <a href="#">Course webpage</a>	4 ECTS
CS210502	<b>Principles of Programming Languages</b> C: 2 S: 0 L: 2 Ex: EVP <a href="#">Course webpage</a>	4 ECTS
CS210503	<b>Genetic Algorithms</b> C: 2 S: 0 L: 2 Ex: EVP <a href="#">Course webpage</a>	4 ECTS
CS210505	<b>Quantum Computing</b> C: 2 S: 0 L: 2 Ex: EVP <a href="#">Course webpage</a>	4 ECTS

*Supplementary courses*

CS2113F	<b>Competitive Programming III</b> C: 1 S: 3 L: 0 Ex: EVP	3 ECTS
CS2114F	<b>Physical Education</b> C: 0 S: 1 L: 0 Ex: EVP	1 ECTS
CS2115F	<b>Industry Training I</b> C: 0 S: 0 L: 2 Ex: EVP	3 ECTS

**Semester 2**

*Compulsory courses*

CS2207	<b>WEB Technologies</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course webpage</a>	6 ECTS
CS2208	<b>Advanced Programming</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course description</a>	5 ECTS
CS2209	<b>Software Engineering</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course description</a>	6 ECTS
CS2210	<b>DBMS Practice</b> C: 1 S: 0 L: 2 Ex: EVP <a href="#">Course description</a>	4 ECTS
CS2212	<b>English Language IV</b> C: 0 S: 2 L: 0 Ex: EVP <a href="#">Course description</a>	4 ECTS

*Optional courses: 1 out of 4*

CS221101	<b>Functional Programming</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course description</a>	5 ECTS
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CS221103	<b>Introduction to Cryptography</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course description</a>	5 ECTS
CS221104	<b>Entrepreneurship and Innovation in IT</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course description</a>	5 ECTS
CS221105	<b>Embedded systems</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course webpage</a>	5 ECTS

*Supplementary courses*

CS2213F	<b>Competitive Programming</b> C: 1 S: 3 L: 0 Ex: EVP	3 ECTS
CS2214F	<b>Physical Education</b> C: 0 S: 1 L: 0 Ex: EVP	1 ECTS

**Year 3 (class 2018-2021)**

**Semester 1**

*Compulsory courses*

CS3101	<b>Machine Learning</b> C: 2 S: 2 L: 0 Ex: E <a href="#">Course webpage</a>	6 ECTS
CS3102	<b>Information Security</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course webpage</a>	5 ECTS
CS3103	<b>Artificial Intelligence</b> C: 2 S: 0 L: 2 Ex: E <a href="#">Course webpage</a>	6 ECTS
CS3106	<b>Practice - Python Programming</b> C: 1 S: 0 L: 2 Ex: EVP <a href="#">Course description</a>	4 ECTS

*Optional courses: 1 out of 4*

CS3104O1	<b>Introduction to .NET</b> C: 2 S: 0 L: 2 Ex: EVP <a href="#">Course webpage</a>	4 ECTS
CS3104O2	<b>Physical systems development using microprocessors</b> C: 2 S: 0 L: 2 Ex: EVP <a href="#">Course webpage</a>	4 ECTS
CS3104O3	<b>Neural networks</b> C: 2 S: 0 L: 2 Ex: EVP <a href="#">Course webpage</a>	4 ECTS

CS310404 **3D computer animation: fundamental algorithms and techniques** 4 ECTS  
C: 2 S: 0 L: 2 Ex: EVP  
[Course webpage](#)

*Optional courses: 1 out of 4*

CS310501 **Probabilistic programming and modeling** 5 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course webpage](#)

CS310502 **Introduction to Mixed Reality** 5 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course webpage](#)

CS310503 **Special Chapters in Operating Systems** 5 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course webpage](#)

CS310504 **Automotive specific software engineering** 5 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course webpage](#)

*Supplementary courses*

CS3113F **Competitive Programming** 3 ECTS  
C: 1 S: 3 L: 0 Ex: EVP

CS3214F **Industry Training II** 3 ECTS  
C: 0 S: 0 L: 2 Ex: EVP

**Semester 2**

*Compulsory courses*

CS3207 **Numerical Calculus** 4 ECTS  
C: 2 S: 0 L: 2 Ex: EVP  
[Course webpage](#)

CS3208 **Computer Graphics** 4 ECTS  
C: 2 S: 0 L: 2 Ex: EVP  
[Course webpage](#)

CS3212 **Diploma Project Development** 5 ECTS  
C: 0 S: 0 L: 4 Ex: EVP  
[Course description](#)

*Optional courses: 1 out of 4*

CS320901 **Rule-based Programming** 5 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course description](#)

CS320902 **Programming Techniques on the Android Platform** 5 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course description](#)

CS320903 **Computational Aspects on the Number Theory** 5 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course webpage](#)

CS320904 **Game Design** 5 ECTS  
C: 2 S: 0 L: 2 Ex: E

*Optional courses: 1 out of 4*

CS321001 **Psychology of the Professional Communication in IT industry** 6 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course description](#)

CS321002 **Cloud Computing** 6 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course webpage](#)

CS321003 **Techniques of natural language engineering** 6 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course description](#)

CS321004 **Social Media Networks Analysis** 6 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course webpage](#)

*Optional courses: 1 out of 3*

CS321005 **Petri Nets and Applications** 6 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course description](#)

CS321006 **Smart Cards and their Applications** 6 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course webpage](#)

CS321007 **Special Topics on .NET programming** 6 ECTS  
C: 2 S: 0 L: 2 Ex: E  
[Course description](#)

*Supplementary courses*

CS3213F **Competitive Programming** 3 ECTS  
C: 1 S: 3 L: 0 Ex: EVP