The list of topics for M.Sc. diploma examination – COMPUTER SCIENCE

Specialty:

Software Engineering

Remark! Learning objectives that are not present in the column Symbols of learning objectives being verified are verified during the admission process.

	Topic	Symbols of learning objectives being verified
1	SOLID code design principles	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U11, K2st_U14, K2st_U15, K2st_U1, K2st_K1
2	Design-Driven Design	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U11, K2st_U14, K2st_U15, K2st_U1, K2st_K1
3	Code metrics and their interpretation	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U11, K2st_U14, K2st_U15, K2st_U1, K2st_K1
4	Database index structures	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U4, K2st_U5, K2st_U6, K2st_U14, K2st_U15, K2st_U16, K2st_K1
5	Relational join methods	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U4, K2st_U5, K2st_U6, K2st_U14, K2st_U15, K2st_U16, K2st_K1
6	Database benchmarking standards	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U4, K2st_U5, K2st_U6, K2st_U14, K2st_U15, K2st_U16, K2st_K1
7	Software requirements	K2st_W5, K2st_W8, K2st_U2, K2st_U5, K2st_U7, K2st_U11, K2st_U14, K2st_U15
8	Project planning and progress tracking	K2st_W5, K2st_W8, K2st_U2, K2st_U5, K2st_U7, K2st_U11, K2st_U14, K2st_U15
9	Conflict management	K2st_W5, K2st_W8, K2st_U2, K2st_U5, K2st_U7, K2st_U11, K2st_U14, K2st_U15
10	Risk management in software projects	K2st_W5, K2st_W8, K2st_U2, K2st_U5, K2st_U7, K2st_U11, K2st_U14, K2st_U15
11	Syncretic approach to software project management	K2st_W5, K2st_W8, K2st_U2, K2st_U5, K2st_U7, K2st_U11, K2st_U14, K2st_U15
12	Quality of user inferface	K2st_W5, K2st_W8, K2st_U2, K2st_U5, K2st_U7, K2st_U11, K2st_U14, K2st_U15
13	Software development using repositories and containers	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U5, K2st_U6, K2st_U11, K2st_U14, K2st_U15, K2st_U16, K2st_K1
14	Data access concepts (LINQ, API etc.)	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U5, K2st_U6, K2st_U11, K2st_U14, K2st_U15, K2st_U16, K2st_K1
15	Distributed programming	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U5, K2st_U6, K2st_U11, K2st_U14, K2st_U15, K2st_U16, K2st_K1
16	Web development concepts (dynamic programming, rapid web development, web api, asynchronous notifications, RPC etc.)	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U5, K2st_U6, K2st_U11, K2st_U14, K2st_U15, K2st_U16, K2st_K1
17	Patterns and concepts (onion architecture, clean architecture MVVM, MVC etc.)	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U5, K2st_U6, K2st_U11, K2st_U14, K2st_U15, K2st_U16, K2st_K1
18	Cloud Computing	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U5, K2st_U6, K2st_U11, K2st_U14, K2st_U15, K2st_U16, K2st_K1
19	Design by Contract	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U11, K2st_U14, K2st_U15, K2st_U16, K2st_K1, K2st_K2
20	Test quality measures	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U11, K2st_U14, K2st_U15, K2st_U16, K2st_K1, K2st_K2
21	Service-Oriented Architecture	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U11, K2st_U14, K2st_U15, K2st_U16, K2st_K1, K2st_K2
22	Evaluation of Software Architecture	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U11, K2st_U14, K2st_U15, K2st_U16, K2st_K1, K2st_K2
23	Component-Based Architecture	K2st_W2, K2st_W3, K2st_W4, K2st_W5, K2st_W6, K2st_U1, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U11, K2st_U14, K2st_U15, K2st_U16, K2st_K1, K2st_K2
24	Legislation important for IT systems in Administration	K2st_W1, K2st_W2, K2st_W5, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U11, K2st_K1, K2st_K2
25	Quality management systems based on ISO 9001:2000	K2st_W1, K2st_W2, K2st_W3, K2st_W8, K2st_U1, K2st_U3, K2st_U4, K2st_U5, K2st_U6, K2st_U9, K2st_U13, K2st_U14, K2st_K2, K2st_K3, K2st_K4
26	Inspections and Reviews	K2st_W1, K2st_W2, K2st_W3, K2st_W8, K2st_U1, K2st_U3, K2st_U4, K2st_U5, K2st_U6, K2st_U9, K2st_U13, K2st_U14, K2st_K2, K2st_K3, K2st_K4
27	Software measurement (GQM, GQM+Strategies, types of measures, measurement scales, etc.)	K2st_W1, K2st_W2, K2st_W3, K2st_W8, K2st_U1, K2st_U3, K2st_U4, K2st_U5, K2st_U6, K2st_U9, K2st_U13, K2st_U14, K2st_K2, K2st_K3, K2st_K4

28	Software improvement paradigms (root casue analysis techniques, Deming cycle, CMMI, Value Stream Maps, Agile checklists etc.)	K2st_W1, K2st_W2, K2st_W3, K2st_W8, K2st_U1, K2st_U3, K2st_U4, K2st_U5, K2st_U6, K2st_U9, K2st_U13, K2st_U14, K2st_K2, K2st_K3, K2st_K4
29	Scaling Agile	K2st_W1, K2st_W2, K2st_W3, K2st_W8, K2st_U1, K2st_U3, K2st_U4, K2st_U5, K2st_U6, K2st_U9, K2st_U13, K2st_U14, K2st_K2, K2st_K3, K2st_K4
30	Empirical Software Engineering research methods (Systematic Literature Review)	K2st_W1, K2st_W2, K2st_W3, K2st_W8, K2st_U1, K2st_U3, K2st_U4, K2st_U5, K2st_U6, K2st_U9, K2st_U13, K2st_U14, K2st_K2, K2st_K3, K2st_K4
31	Empirical Software Engineering research methods (Controlled experiment, Case study, Survey)	K2st_W1, K2st_W2, K2st_W3, K2st_W8, K2st_U1, K2st_U3, K2st_U4, K2st_U5, K2st_U6, K2st_U9, K2st_U13, K2st_U14, K2st_K2, K2st_K3, K2st_K4
32	Quantitative and qualitative data analysis methods in Empirical Sofware Engineering (descriptive statistics, statistical inference testing, hypothesis generation/coding, etc.)	K2st_W1, K2st_W2, K2st_W3, K2st_W8, K2st_U1, K2st_U3, K2st_U4, K2st_U5, K2st_U6, K2st_U9, K2st_U13, K2st_U14, K2st_K2, K2st_K3, K2st_K4
33	AI in multimedia - exemplary applications	K2st_W1, K2st_W3, K2st_W4, K2st_W5, K2st_U1, K2st_U3, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U10, K2st_K1, K2st_K2
34	Standardization in the domain of multimedia	K2st_W1, K2st_W3, K2st_W4, K2st_W5, K2st_U1, K2st_U3, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U10, K2st_K1, K2st_K2
35	Code smells	K2st_W1, K2st_W2, K2st_W3, K2st_W5, K2st_W6, K2st_U1, K2st_u3, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U10, K2st_U13, K2st_K1, K2st_K2
36	Software refactorings	K2st_W1, K2st_W2, K2st_W3, K2st_W5, K2st_W6, K2st_U1, K2st_u3, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U10, K2st_U13, K2st_K1, K2st_K2
37	Metrics of software evolution	K2st_W1, K2st_W2, K2st_W3, K2st_W5, K2st_W6, K2st_U1, K2st_u3, K2st_U4, K2st_U5, K2st_U6, K2st_U8, K2st_U9, K2st_U10, K2st_U13, K2st_K1, K2st_K2
38	Differences and similarities between SSR, CSR, and SSG	K2st_W1, K2st_W3, K2st_W5, K2st_U5, K2st_U2, K2st_U6, K2st_U7, K2st_U9, K2st_U11, K2st_K1, K2st_K2
39	"Function hoisting" in the JavaScript and TypeScript languages	K2st_W1, K2st_W3, K2st_W5, K2st_U5, K2st_U2, K2st_U6, K2st_U7, K2st_U9, K2st_U11, K2st_K1, K2st_K2
40	Ways of storing client-side data in web applications	K2st_W1, K2st_W3, K2st_W5, K2st_U5, K2st_U2, K2st_U6, K2st_U7, K2st_U9, K2st_U11, K2st_K1, K2st_K2