NEW TA 4.0	
BO-ID	The candidate shall…
TA-BO1	Support and perform appropriate testing based on the software development lifecycle followed
TA-BO2	Apply the principles of risk-based testing
TA-BO3	Select and apply appropriate test techniques to support the achievement of test objectives
TA-BO4	Provide documentation at appropriate levels of detail and quality
TA-BO5	Determine the appropriate types of functional testing to be performed
TA-BO6	Contribute to non-functional testing
TA-BO7	Contribute to defect prevention
TA-BO8	Improve the efficiency of the test process with the use of tools
TA-BO9	Specify the requirements for test environments and test data

OLD TA 3.1	
BO-ID	The candidate shall…
TA1	Perform the appropriate testing activities based on the software development lifecycle being used
TA2	Determine the proper prioritization of the testing activities based on the information provided by the risk analysis
TA3	Select and apply appropriate test techniques to ensure that tests provide an adequate level of confidence, based on defined coverage criteria.
TA4	Provide the appropriate level of documentation relevant to their testing activities
TA5	Determine the appropriate types of functional testing to be performed
TA6	Work effectively in a usability testing team
TA7	Effectively participate in requirements / user story reviews with stakeholders, applying knowledge of typical mistakes made in work products
TA8	Improve the efficiency of the test process with the use of tools

Notes / justification for changes
Improved the wording slightly
Simplified the wording
Simplified the wording
Improved the wording, added the quality of documentation
Generalized to non-functional test types in which the TA is involved
Extended the scope to any kind of test basis; added constructive quality assurance measures
Added an important practical outcome of test design

NEW TA 4.0			Duration
Unique LO	Learning Objective	K-Level	1200
1	**The Test Analyst's Tasks in the Test Process**		**225**
1.1	**Testing in the Software Development Lifecycle**		
TA-1.1.1	Summarize the involvement of the test analyst in various software development lifecycles	K2	15
1.2	**Involvement in the test activities**		
TA-1.2.1	Summarize the tasks performed by the test analyst as part of test analysis	K2	15
TA-1.2.2	Summarize the tasks performed by the test analyst as part of test design	K2	15
TA-1.2.3	Summarize the tasks performed by the test analyst as part of test implementation	K2	15
TA-1.2.4	Summarize the tasks performed by the test analyst as part of test execution	K2	15
1.3	**Tasks related to work products**		
TA-1.3.1	Differentiate between high-level test cases and low-level test cases	K2	15
TA-1.3.2	Explain the quality criteria for test cases	K2	15
TA-1.3.3	Give examples of test environment requirements	K2	15
TA-1.3.4	Explain the test oracle problem and potential solutions	K2	15
TA-1.3.5	Give examples of test data requirements	K2	15
TA-1.3.6	Use keyword-driven testing to develop test scripts	K3	60

OLD TA 3.1			Duration
Unique LO	Learning Objective	K-Level	1230
1	**The Test Analyst's Tasks in the Test Process**		**150**
1.1	**Introduction**		
1.2	**Testing in the Software Development Lifecycle**		
TA-1.2.1	Explain how and why the timing and level of involvement for the Test Analyst varies when working with different software development lifecycle models	K2	
1.3	**Test Analysis**		
TA-1.3.1	Summarize the appropriate tasks for the Test Analyst when conducting analysis activities	K2	
1.4	**Test Design**		
TA-1.4.1	Explain why test conditions should be understood by the stakeholders	K2	
TA-1.4.3	Explain the issues to be considered in test case design	K2	
1.5	**Test Implementation**		
TA-1.5.1	Summarize the appropriate tasks for the Test Analyst when conducting test implementation activities	K2	
1.6	**Test Execution**		
TA-1.6.1	Summarize the appropriate tasks for the Test Analyst when conducting test execution activities	K2	
TA-1.4.2	For a given project scenario, select the appropriate design level for test cases (high-level or low-level)	K4	
TA-6.2.1	For a given scenario determine the appropriate activities for a Test Analyst in a keyword-driven testing project	K3	

Notes / justification for changes

3 days * 7 hours net training * 60 mins. = 1260 mins.
The training durations of the new TA are based on the current guidelines in the Syllabus Tempalte.
The training durations of the old TA are taken from the Chapter headings; they don't exactly match our latest guidelines.
We have adapted the structure to the current template and removed the introductory sections. Introductory parts are now before each section, not before the whole chapter

LO rephrased and simplified

1.4.2 matches new 1.3.1

1.4.1 and 1.4.3 merged into one new 1.2.2

New section that discusses important, practical tasks that test analysts should perform

K-level reduced to K2; we have new K3 and K4 Los so due to time constraints we had to reduce K-level for the topics we want to keep, but which are not so important that they must be on K4 level

A new topic related to the quality of test cases

A new topic related to test environment (missing from TA 3.1)

A new topic related to an important issue of the oracle problem; also related to a newy introduced technique, metamorphic testing, in 3.3.2

A new topic related to test data (missing from TA 3.1)

We removed Chapter 6 and cover the tool usage in the sections dealing with the activities supported.

NEW TA 4.0			Duration	OLD TA 3.1			Duration	Notes / justification for changes
TA-1.3.7	Summarize the types of tools to manage the testware	K2	15	TA-6.3.1	Explain the usage and types of test tools applied in test design, test data preparation and test execution	K2		Regarding tools, we focus on managing the testware and on keyword-driven testing (old 6.2.1) is covered in new 1.2.3
2	**The Test Analyst's Tasks in Risk-Based Testing**		**90**	**2**	**The Test Analyst's Tasks in Risk-Based Testing**		**60**	
2.1	**Risk Analysis**			**2.1**	**Introduction**			Risk activities aligned with the risk management process described in the new Foundation 4.0; made one LO correspond to only one section
				2.2	**2.2 Risk Identification**			
				2.3	**2.3 Risk Assessment**			
				2.4	**2.4 Risk Mitigation**			
TA-2.1.1	Summarize the test analyst's contribution to product risk analysis	K2	15	TA-2.1.1	For a given situation, participate in risk identification, perform risk assessment and propose appropriate risk mitigation	K3		2.1.1 split into two separate LOs related to two risk management phases; In risk control, set a new focus on change-related testing
2.2	**Risk Control**							
TA-2.2.1	Analyze the impact of changes to determine the scope of regression testing	K4	75					
3	**Test Analysis and Design**		**615**	**3**	**Test Techniques**		**630**	Black-box techniques grouped by the model type they are based on (domain, behavior, rules) and focused on applying the techniques (K3) and collected the analysis of which techniques to apply in one single LO TA-3.5.1 (K4). The chapter title aligned with the similar chapter in CTFL 4.0
3.1	**Data-Based Test Techniques**			**3.1**	**Introduction**			
				3.2	**Black-Box Test Techniques**			
TA-3.1.1	Apply domain testing	K3	60	TA-3.2.1	Analyze a given specification item(s) and design test cases by applying equivalence partitioning	K4		EP and BVA are special cases of domain testing. BVA is a special, one-dimensional case of it; in practice TA deals very often with high-dimensional domains
TA-3.1.2	Apply combinatorial testing	K3	60	TA-3.2.2	Analyze a given specification item(s) and design test cases by applying boundary value analysis	K4		
				TA-3.2.6	Analyze a given specification item(s) and design test cases by applying pairwise testing	K4		3.2.5 and 3.2.6 are special cases of combinatorial testing discussed in one LO, 3.1.2
TA-3.1.3	Summarize the benefits and limitations of random testing	K2	15	TA-3.2.5	Explain how classification tree diagrams support test techniques	K2		New technique introduced. Random testing is very effective technique, so worth mentioning it on the advanced level
3.2	**Behavior-based Test Techniques**							
TA-3.2.1	Explain CRUD testing	K2	15					New technique, important in data-oriented systems and SQL-related processes
TA-3.2.2	Apply state-based testing	K3	60	TA-3.2.4	Analyze a given specification item(s) and design test cases by applying state transition testing	K4		We treat the topic more general, introducing the state-based testing, not restricting to simple finite state machines only
TA-3.2.3	Apply scenario-based testing	K3	60	TA-3.2.7	Analyze a given specification item(s) and design test cases by applying use case testing	K4		We generalize the topic; we don't speak of use cases only, but we describe the general approach to scenario-based testing, following ISO 29119-4 ("scenario testing")
3.3	**Rule-Based Test Techniques**							

NEW TA 4.0			Duration	OLD TA 3.1			Duration	Notes / justification for changes
TA-3.3.1	Apply decision table testing	K3	60	TA-3.2.3	Analyze a given specification item(s) and design test cases by applying decision table testing	K4		New, important technique, a good choice in case of lack of a test oracle
TA-3.3.2	Apply metamorphic testing	K3	60					
3.4	**Experience-Based Test Techniques**			**3.3**	**Experience-Based Test Techniques**			
TA-3.4.1	Prepare test charters for session-based testing	K3	60	TA-3.3.2	Identify exploratory tests from a given scenario	K3		Old 3.3.2 split int two. In 3.4.1 we focus on practical activity of preparing test charters. In 3.4.2 we introduce the topic of checklists, described in FL 4.0 on a K2 level; we introduce them in the context of exploratory testing
TA-3.4.2	Prepare checklists that support experience-based testing	K3	60					
TA-3.4.3	Give examples of the benefits and limitations of crowd testing	K2	15					We present a new approach, crowd testing, which in some cases is a good approach for detecting many defects in a short time
3.5	**Applying the Most Appropriate Test Techniques**			**3.4**	**Applying the Most Appropriate Test Techniques**			
TA-3.5.1	Select appropriate test techniques to mitigate product risks for a given situation	K4	75	TA-3.2.8	Analyze a system, or its requirement specification, in order to determine likely types of defects to be found and select the appropriate black-box test technique(s)	K4		Four LOs, related to understanding the differences between techniques and selecting the appropriate technique(s) combined into one K4 LO
				TA-3.3.3	Describe the application of defect-based test techniques and differentiate their use from black-box test techniques	K2		
				TA-3.4.1	For a given project situation, determine which black-box or experience-based test techniques should be applied to achieve specific goals	K2		
				TA-3.3.1	Explain the principles of experience-based test techniques and the benefits and drawbacks compared to black-box and defect-based test techniques	K2		
TA-3.5.2	Explain the benefits and risks of automating the test design	K2	15					New topic about test automation in the context of test design (used, e.g., in model-based testing)
4	**Testing Quality Characteristics**		**60**	**4**	**Testing Software Quality Characteristics**		**180**	
				4.1	**Introduction**			
4.1	Functional testing			**4.2**	**Quality Characteristics for Business Domain Testing**			
TA-4.1.1	Differentiate between functional correctness, functional appropriateness, and functional completeness testing	K2	15	TA-4.2.1	Explain what test techniques are appropriate to test the functional completeness, functional correctness and functional appropriateness	K2		The topic is simplified, since functional testing is described in detail in the context of test techniques in chapter 3
				TA-4.2.2	Define the typical defects to be targeted for the functional completeness, functional correctness and functional appropriateness characteristics	K2		
				TA-4.2.3	Define when the functional completeness, correctness and appropriateness characteristics should be tested in the software development lifecycle	K2		

NEW TA 4.0			Duration	OLD TA 3.1			Duration	Notes / justification for changes
				TA-4.2.7	For a given set of requirements, determine the test conditions required to verify the functional and/or non-functional quality characteristics within the scope of the Test Analyst	K4		
4.2	**Usability testing**							
TA-4.2.1	Explain how the test analyst contributes to usability testing	K2	15	TA-4.2.4	Explain the approaches that would be suitable to verify and validate both the implementation of the usability requirements and the fulfillment of the user's expectations	K2		LO rephrased and simplified, overlap with CT-UT reduced
4.3	**Flexibility testing**							Characteristic name changed from portability to flexibility, to be aligned with the new ISO 25010 (2023)
TA-4.3.1	Explain how the test analyst contributes to adaptability and installability testing	K2	15	TA-4.2.6	Explain the role of the Test Analyst in portability testing including identification of the defects to be targeted	K2		LO rephrased and simplified
4.4	**Compatibility testing**							
TA-4.4.1	Explain how the test analyst contributes to interoperability testing	K2	15	TA-4.2.5	Explain the role of the Test Analyst in interoperability testing including identification of the defects to be targeted	K2		LO reprhrased and simplified
5	**Software Defect Prevention**		**225**	**5**	**Reviews**		**120**	Extended the scope to various contributions of the TA to software defect prevention and quality control
5.1	**Defect Prevention Practices**			**5.1**	**Introduction**			
TA-5.1.1	Explain how the test analyst can contribute to defect prevention	K2	15					New topic introducing the defect prevention approaches and techniques
5.2	**Supporting Phase Containment**			**5.2**	**Using Checklists in Reviews**			New topic that shows how models (e.g. in MBT) can help in defect prevention
TA-5.2.1	Use a model of the test object to detect defects in a specification	K3	60	TA-5.2.1	Identify problems in a requirements specification according to checklist information provided in the syllabus	K3		Two similar LOs combined into one (instead of particular work products like reqs and user stories, we focus on test basis) and generalized the LO from checlist-based to various test techniques
TA-5.2.2	Apply a review technique to a test basis to find defects	K3	60	TA-5.2.2	Identify problems in a user story according to checklist information provided in the syllabus	K3		
5.3	Mitigating the Recurrence of Defects							New topic describing a very important analytical skill of the Test Analyst, in the context of product and process improvement
TA-5.3.1	Analyze test results to identify potential improvements to defect detection	K4	75					New topic discussing how defect classification helps to analyze and prioritize root causes
TA-5.3.2	Explain how defect classification supports root cause analysis	K2	15					
				6	**Test Tools and Automation**		**90**	Topics on tools moved to section 1, where we focus on practical application of the tools, rather than on classification (old 6.3)
				6.1	**Introduction**			
				6.2	**Keyword-Driven Testing**			6.2.1 matches new 1.3.6
				6.3	**Types of Test Tools**			6.3.1 matches new 1.3.7