European Software
Skills Alliance.

Train the Trainer Programme

Annex VIII
Test Specialist
EQF 4/5

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Deliverable 13: "ESSA Train the Trainer Programme & Materials"– Annex VIII

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About ESSA

The European Software Skills Alliance (ESSA) is a four-year transnational project funded under the EU's Erasmus+ programme. It ensures the skills needs of the rapidly evolving Software sector can be met — today and tomorrow.

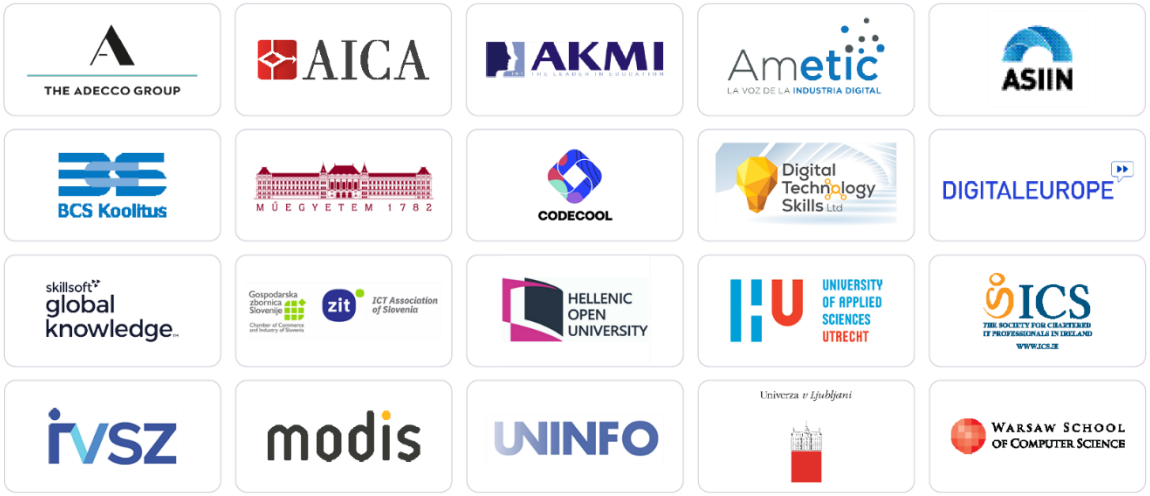
ESSA provides current and future software professionals, learning providers and organisations with software needs with the educational and training instruments they need to meet the demand for software skills in Europe.

ESSA will develop a European Software Skills Strategy and learning programmes for Europe. It will address skill mismatches and shortages by analysing the sector in depth and delivering future-proof curricula and mobility solutions; tailored to the European software sector's reality and needs.

Project partners

The ESSA consortium is led by DIGITALEUROPE. It is composed of academic and non-academic partners from the education, training, and software sectors.

View all project partners: ESSA Partners | ESSA Associated Partners



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List of abbreviations and acronyms

Abbreviation	Term
e-CF, EN 16234-1	European e-Competence Framework, European Norm 16234 - Part 1: Framework
ECTS	European Credit Transfer and Accumulation System
EQF	European Qualifications Framework
ESSA	European Software Skills Alliance
LO	Learning Outcome
PLO	Programme Learning Outcome

1 How to use the ESSA Learning programme for Test Specialist EQF 4/5 profile

1.1 Introduction

In this Annex trainers, teachers and educators are provided with all information necessary to deliver the ESSA Learning Programme designed for the Test Specialist EQF 4/5 Educational profile

The learning path follows a modular and flexible structure based on Programme Learning Outcomes (PLOs). Each PLO includes self-consistent Learning Units (LUs) supported by specific learning materials.

In particular, this document provides:

- overall information about the Learning Programme - Objective, Total number of Programme Learning Outcomes (PLOs) concerned, Total Learning Units (LUs), Overall duration (hours); Total number of ECTS; Targeted Institutions (learning providers);
- detailed Learning Programme including the Learning Units for each Programme Learning Outcome (PLO).

In this regard, more specifically, the following is provided for each Programme Learning Outcome (PLO):

- overall information (N. of Learning Units, Duration in hours, Total number of ECTS, Recommendations for Micro-credentials, possible integration with studies related to other PLOs, Recommended Didactical Approach, Recommended Delivery methods, etc);
- detailed information for each Learning Unit (title, duration in hours, Didactical Approach and delivery method, type of Assessment, Title of the related Learning material proposed, Link to access to the learning material - ESSA Platform).

This Annex is strictly related to the document "*Train the Trainer Programme. DELIVERABLE 13 – ESSA Train the Trainer Programme & Materials".*

As a further support, it is advised to consult the documents indicated in the paragraph "*Sources of reference*" of the Deliverable 13 above mentioned, through the available links.

Learning materials developed to support the delivery of the ESSA Learning Programme for this Educational Profile are available on the ESSA platform at the following link: https://learn.softwareskills.eu/

1.2 TARGET

The following Learning Programme addresses **University students and professionals in upskilling/reskilling paths.**

2 How to deliver the ESSA Test Specialist EQF 4/5 profile

2.1 University students and professionals in upskilling/reskilling paths

2.1.1 Overall Information about the Learning Programme

Objective	*The programme provides participants with the skills useful to perform software testing operations, necessary to develop any software platform and application.* *Participants will learn:* • *the fundamentals of software testing;* • *how to use the main tools to support testing activities;* • *ISTQB certification procedures for software testing.* *In addition, the course provides learners with the knowledge necessary to the management of a digital project and team collaboration.*
Total number of PLOs concerned	*9*
Total Learning Units (LU)	*17*
Duration	*120 hours*
Total number of ECTS	*5*
Targeted Institutions	*Higher Education and training providers*

2.1.2 Learning Programme PLO 1 – Component integration [e-2]

Overall information PLO 1 – Component integration [e-2]	
N. of Learning Units	*1*
Learning Outcomes	- *Explains and distinguishes common methods, techniques and tools related to efficient integration* - *Describes the interplay between and compatibility of system components* - *Selects the relevant integration testing techniques, to ensure the system meets requirements* - *Monitors and tests the connectivity of integrated systems*

	- *Writes an integration test result report*
Duration	*20 hours*
Total number of ECTS	*starting from n.1 ECTS*
Recommendations for Micro-credentials	*This PLO should be an integral part of the initial studies for students with no prior knowledge of software testing procedures and tools.*
Often integrated with studies of PLO	PLO 2 Testing [e-2]
Recommended Didactical Approach	Virtual Classroom
Additional comments	*It is recommended to deepen the topics presented in the Learning Units by reading publications dedicated to the various topics, reading websites specialized in software testing, watching online tutorials and downloading materials useful for practical exercises from reliable sources.*
Recommended Delivery methods	*Lecture up to 30%* *Software testing Training Lab delivered by individual/team project work up to 70+%*
Additional comments	*After learning the basic principles, terminology, and models of software testing, the study should focus on analysing and simulating real work-life-like tasks as, for example, the student:* • *Participates in a software testing process and applies a common software development method;* • *Writes code and related documentation to it, by using a common software testing platform/tool and applying coding conventions;* • *Monitors and tests the connectivity of integrated systems.*
Work Based Learning Task *(If foreseen) and* Follow-up, learning reinforcement	*After learning the basic principles, terminology, and models of software design, the study should focus on analysing and simulating real work-life-like tasks as, for example:* • *Designing simple design models & diagrams for a software testing project*
Important (new) approaches and technologies to consider	*n/a*
Training facilities (Link to ESSA learning material Platform)	*https://learn.softwareskills.eu/*

2.1.2.1 Learning Units PLO 1 – Component integration [e-2]

LU1	ISTQB® Advanced Level Test
Duration	*20 hours*
Didactical Approach and delivery method	*Virtual classroom, Workshop and lecture guides*
Additional information	*The didactic approach would be aimed to allows participants to understand the main procedures of software testing, through the use of practical examples, such as viewing and analyzing software and programming code.*
Assessment	*Assignment: Practical activity: The candidate will perform a software test using the ISTQB® certified tester framework.*
Title of the Learning material	*ISTQB Advanced level test* *Tool support for testing*

2.1.3 Learning Programme PLO 2 – Testing [e-2]

Overall information PLO 2 - Testing [e-2]	
N. of Learning Units	*1*
Learning Outcomes	- *Explains and distinguishes principles of software testing, common testing methods, techniques, and tools* - *Designs test cases, test scripts, test conditions, and test plans for given requirements* - *Automates repeatable testing tasks* - *Configures a test environment* - *Performs manual and automated test activities, applying testing and debugging techniques and tools* - *Records and interprets test outcomes and writes test result documentation/ test report*
Duration	*12 hours*
Total number of ECTS	*starting from n.0,5 ECTS*
Recommendations for Micro-credentials	*This PLO should be an integral part of the initial studies for students with no prior knowledge of software component integration.*
Often integrated with studies of PLO	PLO 5 Risk Management [e-2]
Recommended Didactical Approach	Virtual Classroom
Additional comments	*It is recommended to deepen the topics presented in the Learning Units by reading publications dedicated to the various topics, reading websites*

	specialized in programming and software testing methodologies, watching online tutorials and downloading materials useful for practical exercises from reliable sources.
Recommended Delivery methods	*Lecture up to 70%* *Software testing Training Lab delivered by individual/team project work up to 30+%*
Additional comments	*It is recommended to deepen the topics presented in the Learning Units by reading publications dedicated to the various topics, reading websites specialized in programming, watching online tutorials and downloading materials useful for practical exercises from reliable sources.*
Work Based Learning Task *(If foreseen) and* Follow-up, learning reinforcement	*After learning the basic principles, terminology, and models of software testing, the study should focus on analysing and simulating real work-life-like tasks as, for example, the student:* · *Participates in a software testing activity;* · *Writes code and related documentation to it.*
Important (new) approaches and technologies to consider	*n/a*
Training facilities (Link to ESSA learning material Platform)	*https://learn.softwareskills.eu/*

2.1.3.1 Learning Units PLO 2 – Testing [e-2]

LU1	**Fundamentals of software testing**
Duration	*12 hours*
Didactical Approach and delivery method	*Virtual classroom, Workshop and lecture guides*
Additional information	*The didactic approach would be aimed to allows participants to understand the fundamentals software testing, through the use of practical examples, such as viewing and analyzing software and programming code.*
Assessment	*Exam: Candidates should identify which software testing approach is most useful for solving a software bug.*
Title of the Learning material	*Component testing and integration* *Fundamentals of software testing* *ISTQB Advanced Level Test* *Software Development Design* *Testing Design Techniques*

2.1.4 Learning Programme PLO 3 – Solution Deployment [e-2]

Overall information PLO 3 – Solution deployment [e-2]	
N. of Learning Units	*2*
Learning Outcomes	- *Executes relevant tests during and after a solution/ software release, applying appropriate methods, techniques, and tools* - *Writes (parts of) release documentation related to the verification and validation of solutions and services*
Duration	*16 hours*
Total number of ECTS	*starting from n.0,5 ECTS*
Recommendations for Micro-credentials	*This PLO should be an integral part of the initial studies for students with no prior knowledge of software component integration.*
Often integrated with studies of PLO	PLO 1 – Component integration [e-2], PLO 2 – Testing [e-2]
Recommended Didactical Approach	Virtual Classroom
Additional comments	-
Recommended Delivery methods	*Lecture up to 70%* *Software testing Training Lab delivered by individual/team project work up to 30%*
Additional comments	*It is recommended to deepen the topics presented in the Learning Units by reading publications dedicated to software testing, watching online tutorials and downloading materials useful for practical exercises from reliable sources.*
Work Based Learning Task *(If foreseen) and* Follow-up, learning reinforcement	*After learning the basic principles, terminology, and models of Solution Deployment, the study should focus on analysing and simulating real work-life-like tasks as, for example, the student:* • *Participates in a development process and applies a common software testing method;* • *Monitors and tests the connectivity of integrated systems.*
Important (new) approaches and technologies to consider	*n/a*
Training facilities (Link to ESSA learning material Platform)	*https://learn.softwareskills.eu/*

2.1.4.1 Learning Units PLO 3 – Solution Deployment [e-2]

LU1	Testing Design Techniques
Duration	*8 hours*
Didactical Approach and delivery method	*Virtual classroom, workshop and lecture guides*
Additional information	*The didactic approach would be aimed to allows participants to understand the fundamentals software testing techniques through the use of practical examples, such as viewing and analyzing software and programming code.*
Assessment	*Assignment: Practical activity: The candidate produces a document which describes the design of a software testing.*
Title of the Learning material	*Component testing and integration* *ISTQB Advanced Level Test*

LU2	Component testing and integration
Duration	*8 hours*
Didactical Approach and delivery method	*Virtual classroom, workshop and lecture guides*
Additional information	*The didactic approach would be aimed to allows participants to understand the fundamentals software testing techniques through the use of practical examples, such as viewing and analyzing software and programming code.*
Assessment	*Assignment:* *Practical activity: The candidate writes a report focused on the analysis of parameters and values of a software, side effects on parameters or resources, omitted or misunderstood functionality, non-functional properties and dynamic mismatches.*
Title of the Learning material	*Component testing and integration* *ISTQB Advanced Level Test*

2.1.5 Learning Programme PLO 4 – Documentation production [e-2]

Overall information PLO 4 – Documentation Production [e-2]	
N. of Learning Units	*2*
Learning Outcomes	- *Describes types of technical documentation* - *Provides different (parts of) common technical documents, using appropriate tools (e.g. software documentation tools)*
Duration	*28 hours*
Total number of ECTS	*starting from n.1 ECTS*

Recommendations for Micro-credentials	*This PLO should be an integral part of the initial studies for students with no prior knowledge of software component integration.*
Often integrated with studies of PLO	*PLO 2 – Testing [e-2]*
Recommended Didactical Approach	Virtual Classroom
Additional comments	*-*
Recommended Delivery methods	*Lecture up to 30%* *Software testing Training Lab delivered by individual/team project work up to 70%*
Additional comments	*It is recommended to deepen the topics presented in the Learning Units by reading publications dedicated to software testing, watching online tutorials and downloading materials useful for practical exercises from reliable sources.*
Work Based Learning Task *(If foreseen) and* Follow-up, learning reinforcement	*After learning the basic principles, terminology, and models of Solution Deployment, the study should focus on analysing and simulating real work-life-like tasks as, for example, the student:* *· Participates in a development process and applies a common software testing method and related documentation production.*
Important (new) approaches and technologies to consider	*n/a*
Training facilities (Link to ESSA learning material Platform)	*https://learn.softwareskills.eu/*

2.1.5.1 Learning Units PLO 4 – Documentation Production [e-2]

LU1	**ISTQB Advanced Level Test**
Duration	*20 hours*
Didactical Approach and delivery method	*Virtual classroom, workshop and lecture guides*
Additional information	*The didactic approach would be aimed to allows participants to understand the fundamentals software testing techniques through the use of practical examples, such as viewing and analyzing software and programming code.*
Assessment	*Assignment:* *Practical activity: The candidate writes a report focused on the analysis of parameters and values of two or more component on a digital application.*
Title of the Learning material	*ISTQB Advanced Level Test*

LU2	Testing Design Techniques
Duration	*8 hours*
Didactical Approach and delivery method	*Virtual classroom, workshop and lecture guides*
Additional information	*The didactic approach would be aimed to allows participants to understand the fundamentals software testing techniques through the use of practical examples, such as viewing and analyzing software and programming code.*
Assessment	*Assignment:* *Practical activity: The candidate analyses a specific software following the STLC reference framework, writing a report of the activity performed.*
Title of the Learning material	*Testing Design Technique*

2.1.6 Learning Programme PLO 5 – Risk Management [e-2]

Overall information PLO 5 – Risk Management [e-2]	
N. of Learning Units	*4*
Learning Outcomes	- *Applies practices, principles, methods, tools and techniques related to risk-based testing* - *Performs a risk analysis with identification and assessment of risks of IT solutions and services* - *Proposes appropriate actions to handle risks, taking into account relevant conditions (e.g., risk/security exceptions, risk acceptance)* - *Writes (parts of) a risk-based testing results report*
Duration	*48 hours*
Total number of ECTS	*starting from n.2 ECTS*
Recommendations for Micro-credentials	*This PLO should be an integral part of the initial studies for students with no prior knowledge of software component integration.*
Often integrated with studies of PLO	PLO 2 – Testing [e-2]
Recommended Didactical Approach	Virtual Classroom
Additional comments	-
Recommended Delivery methods	*Lecture up to 30%* *Software testing Training Lab delivered by individual/team project work up to 70%*
Additional comments	*It is recommended to deepen the topics presented in the Learning Units by reading publications dedicated to software testing, watching online tutorials*

	and downloading materials useful for practical exercises from authoritative sources. Lectures, e-learning are recommended for learning the basic principles, terminology, and models of software testing and risk management. These should be reinforced through practical tasks, case studies, individual/team-projects.
Work Based Learning Task *(If foreseen) and* Follow-up, learning reinforcement	*After learning the basic principles, terminology, and models of software testing and risk management on digital projects, the study should focus on analysing and simulating real work-life-like tasks as, for example, the student:* • *Participates in a development process and applies a common software testing method and related documentation production ab out risk management of software-related digital projects.*
Important (new) approaches and technologies to consider	*n/a*
Training facilities (Link to ESSA learning material Platform)	*https://learn.softwareskills.eu/*

2.1.6.1 Learning Units PLO 5 – Risk Management [e-2]

LU1	**Component testing and integration**
Duration	*8 hours*
Didactical Approach and delivery method	*Virtual classroom, Workshop and lecture guides*
Additional information	*The didactic approach would be aimed to allows participants to understand the fundamentals of component testing and integration by the use of practical examples, such as viewing and analyzing software and programming code.*
Assessment	*Assignment:* *Practical activity: The candidate writes a report focused on the analysis of parameters and values of a software, side effects on parameters or resources, omitted or misunderstood functionality, non-functional properties and dynamic mismatches.*
Title of the Learning material	*Component testing and integration*

LU2	**The fundamentals of software testing**
Duration	*12 hours*
Didactical Approach and delivery method	*Virtual classroom, Workshop and lecture guides*

Additional information	*The didactic approach would be aimed to allows participants to understand the fundamentals of software testing by the use of practical examples, such as viewing and analyzing software and programming code.*
Assessment	*Assignment:* *Exam: Candidates should identify which software testing approach is most useful for solving a software bug.*
Title of the Learning material	*Fundamentals of software testing and integration*

LU3	**ISTQB® Advanced Level Test**
Duration	*20 hours*
Didactical Approach and delivery method	*Virtual classroom, workshop and lecture guides*
Additional information	*The didactic approach would be aimed to allows participants to understand the fundamentals of ISTQB framework by the use of practical examples, such as viewing and analyzing software and programming code.*
Assessment	*Assignment:* *Practical activity: The candidate will perform a software test using the ISTQB® certified tester framework.*
Title of the Learning material	*ISTQB Advanced Level Test*

LU4	**Testing Design Techniques**
Duration	*8 hours*
Didactical Approach and delivery method	*Virtual classroom, workshop and lecture guides*
Additional information	*The didactic approach would be aimed to allows participants to understand the fundamentals of testing design by the use of practical examples, such as viewing and analyzing software and programming code.*
Assessment	*Assignment:* *Practical activity: The candidate produces a document which describes the design of a software testing.*
Title of the Learning material	*Testing Design Techniques*

2.1.7 Learning Programme PLO 6 – Profession related competences [EQF5]

Overall information PLO 6 – Profession related competences [EQF5]	
N. of Learning Units	*3*
Learning Outcomes	- *Masters common ICT knowledge* - *Explains the principles, related concepts, advantages and disadvantages of a new technology. Applies and reports on basic methods, techniques and tools related to a new technology.* - *Applies and reports on measures, methods, tools and techniques related to security* - *Applies and reports on measures, methods, tools and techniques related to software lifecycle processes* - *Is aware of basic ethical considerations and issues*
Duration	*28 hours*
Total number of ECTS	*starting from n.1 ECTS*
Recommendations for Micro-credentials	*This PLO should be an integral part of the initial studies for students with no prior knowledge of team collaboration and project management.*
Often integrated with studies of PLO	PLO 8. Functioning in organisation [EQF5], EXTRA CURRICULAR PLO: New Technology [EQF5]
Recommended Didactical Approach	Virtual Classroom
Additional comments	-
Recommended Delivery methods	*Lecture up to 30%* *Independent learning up to 70%*
Additional comments	*It is recommended to deepen the topics presented in the Learning Units by reading publications dedicated to software testing, watching online tutorials and downloading materials useful for practical exercises from reliable sources.*
Work Based Learning Task *(If foreseen) and* Follow-up, learning reinforcement	*After learning the basic principles, terminology, and models of professional-related competences (such as: team collaboration and Project Management), the study should focus on analysing and simulating real work-life-like tasks.*
Important (new) approaches and technologies to consider	*n/a*
Training facilities (Link to ESSA	*https://learn.softwareskills.eu/*

learning material Platform)	

2.1.7.1 Learning Units PLO 6 – Profession related competences [EQF5]

LU1	**Introduction to ICT and digital system integration**
Duration	*8 hours*
Didactical Approach and delivery method	*Practical Activity*
Additional information	*The didactic approach would be aimed to allows participants to understand the basic concept of ICT and Digital Transformation.*
Assessment	*Assignment: Candidates develop a report about the possible implementation of a new digital platform to solve a business or a technical need.*
Title of the Learning material	*Introduction to ICT and digital system integration*

LU2	**Project Management**
Duration	*12 hours*
Didactical Approach and delivery method	*Practical Activity*
Additional information	*The didactic approach would be aimed to allows participants to understand the basic concept of project management, agile project management and SCRUM*
Assessment	*Laboratory:* *Practical activity: The candidate will perform a software development activity using Agile methodology, working on a team group.*
Title of the Learning material	*Project Management basics, Agile and SCRUM*

LU3	**Team Collaboration**
Duration	*8 hours*
Didactical Approach and delivery method	*Practical Activity*
Additional information	*The didactic approach would be aimed to allows participants to understand the basic concept and mindset useful for team collaboration.*
Assessment	*Laboratory: The candidate will develop a software testing project by communicating with other colleagues through collaboration and corporate communication tools.*
Title of the Learning material and file	*Team Collaboration and file versioning*

2.1.8 Learning Programme PLO 7 – Soft competences [EQF5]

Overall information PLO 7 – Soft competences [EQF5]	
N. of Learning Units	*2*
Learning Outcomes	- *Works together with others in a team* - *Communicates with peers, colleagues, supervisors and or relevant other, appropriately to the context, using conventions that are relevant to professional practice. Explains and gives instruction.* - *Masters the English language at a level B2. Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation* - *Distinguishes and analyses fairly complex and unpredictable problems. Solves these problems systematically and in a creative way, using existing procedures and guidelines and own solutions by identifying and using data.* - *Exercises self-management within the guidelines of contexts that are usually predictable but are subject to change. Is able to cope with limited change and to adapt to a certain level of variety in the workplace. Copes with pressure and stress setbacks and maintains composure. Shows some initiative and carries responsibility for the results of own activities, work and or study. Works correctly and carefully.* - *Realises learning and personal development on request, where necessary with support, through self-reflection and external- and self-evaluation of own (learning) results.*
Duration	*16 hours*
Total number of ECTS	*starting from n.0,5 ECTS*
Recommendations for Micro-credentials	*This PLO should be an integral part of the initial studies for students with no prior knowledge of team collaboration and project management.*
Often integrated with studies of PLO	EXTRA CURRICULAR PLO: New Technology [EQF5]
Recommended Didactical Approach	Virtual Classroom
Additional comments	-
Recommended Delivery methods	*Lecture up to 70%* *Self-study up to 30%*
Additional comments	*Lectures, e-learning are recommended for learning the basic principles, terminology, and models of software design. These should be reinforced through practical tasks, case studies, individual/team-projects.*

Work Based Learning Task *(If foreseen) and* Follow-up, learning reinforcement	*After learning the basic principles, terminology, and models of professional-related competences, the study should focus on analysing and simulating real work-life-like tasks.*
Important (new) approaches and technologies to consider	*n/a*
Training facilities (Link to ESSA learning material Platform)	*https://learn.softwareskills.eu/*

2.1.8.1 Learning Units PLO 7 – Soft competences [EQF5]

LU1	**Team Collaboration**
Duration	*8 hours*
Didactical Approach and delivery method	*Practical Activity*
Additional information	*Facilitate the acquisition of a mindset and skills useful for promoting team collaboration activities.*
Assessment	*Laboratory: The candidate will develop a software testing project by communicating with other colleagues through collaboration and corporate communication tools.*
Title of the Learning material	*Team collaboration and file versioning*

LU2	**Testing Design Techniques**
Duration	*8 hours*
Didactical Approach and delivery method	*Practical Activity*
Additional information	*Generate awareness of key testing design practices*
Assessment	*Assignment:* *Practical activity: The candidate produces a document which describes the design of a software testing.*
Title of the Learning material	*Testing design techniques*

2.1.9 Learning Programme PLO 8 – Functioning in organisation [EQF5]

Overall information PLO 8 – Functioning in organisation [EQF5]	
N. of Learning Units	*1*
Learning Outcomes	- *Explains basics of organisation theory and behaviour* - *Describes the relationship between business and IT* - *Works in an organisational context under specific direction with limited autonomy and responsibility e.g., at the level of a trainee, junior or assistant* - *Works in project settings, applies project management methods and tools* - *Writes a report on functioning in the organisation*
Duration	*8 hours*
Total number of ECTS	*starting from n.0,5 ECTS*
Recommendations for Micro-credentials	*n/a*
Often integrated with studies of PLO	PLO 7 Soft competence [EQF5]
Recommended Didactical Approach	Virtual Classroom
Additional comments	*-*
Recommended Delivery methods	*Lecture up to 100%*
Additional comments	*It is recommended to deepen the topics presented in the Learning Units by reading publications dedicated to organizational design, watching online tutorials and downloading materials useful for practical exercises from authoritative sources.*
Work Based Learning Task *(If foreseen) and* Follow-up, learning reinforcement	*n/a*
Important (new) approaches and technologies to consider	*Participants are advised to delve deeper into the innovative topic of. Exponential organizations.*
Training facilities (Link to ESSA learning material Platform)	*https://learn.softwareskills.eu/*

2.1.9.1 Learning Units PLO 8 – Functioning in organisation [EQF5]

LU1	Team Collaboration (soft Skill)
Duration	*8 hours*
Didactical Approach and delivery method	*Practical activity*
Additional information	*Facilitate the acquisition of team collaboration skills through project management tools*
Assessment	*Laboratory: The candidate will develop a software testing project by communicating with other colleagues through collaboration and corporate communication tools.*
Title of the Learning material	*Fundamentals of Team Collaboration*

2.1.10 Learning Programme EXTRA CURRICULAR PLO: New Technology [EQF5]

Overall information EXTRA CURRICULAR PLO: New Technology [EQF5]	
N. of Learning Units	*1*
Learning Outcomes	- *Explains the principles, related concepts, advantages and disadvantages of a new technology* - *Applies basic methods, techniques and tools related to a new technology* - *Writes a report on the application of a method, technique or tool related to a new technology*
Duration	*8 hours*
Total number of ECTS	*starting from n.0,5 ECTS*
Recommendations for Micro-credentials	-
Often integrated with studies of PLO	1 Recommendations for Micro-credentials This PLO should be an integral part of the initial studies for students with no prior knowledge of ICT Technologies
Recommended Didactical Approach	Virtual Classroom
Additional comments	-
Recommended Delivery methods	*Lecture* *up to 30%* *Case study. Individual/team project* *up to 70%*

Additional comments	*-*
Work Based Learning Task *(If foreseen) and* Follow-up, learning reinforcement	*n/a*
Important (new) approaches and technologies to consider	*n/a*
Training facilities (Link to ESSA learning material Platform)	*https://learn.softwareskills.eu/*

2.1.10.1 Learning Units EXTRA CURRICULAR PLO: New Technology [EQF5]

LU1	**Introduction to ICT and digital system integration**
Duration	*8 hours*
Didactical Approach and delivery method	*Practical Activity*
Additional information	*Promote the understanding of the role of ICT technologies and the way in which digital system integration create platforms and software applications to develop digital products and services.*
Assessment	*Assignment: Candidates develop a report about the possible implementation of a new digital platform to solve a business or a technical need.*
Title of the Learning material	*Fundamentals of Team Collaboration*

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