

European Software
Skills Alliance.

Train the Trainer Programme

DELIVERABLE 13 – ESSA Train the Trainer Programme & Materials

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ESSA

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Train the Trainer Programme & Materials, Final version

Deliverable 13: “ESSA Train the Trainer Programme & Materials”

This document is a draft version and is subject to change after review coordinated by the European Education and Culture Executive Agency (EACEA).

Authors: Federica D’Armini (Adecco/Mylia)

Editors/Reviewers: Chiara Longobardi (Adecco/Mylia), Sabine Boesen – Mariani (Utrecht University of Applied Sciences), Niels Selling (DigitalEurope), Ants Slid (BCS Koolitus), Jutta Breyer (DigitalEurope), Paul Aertsen (Global Knowledge)

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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](#)

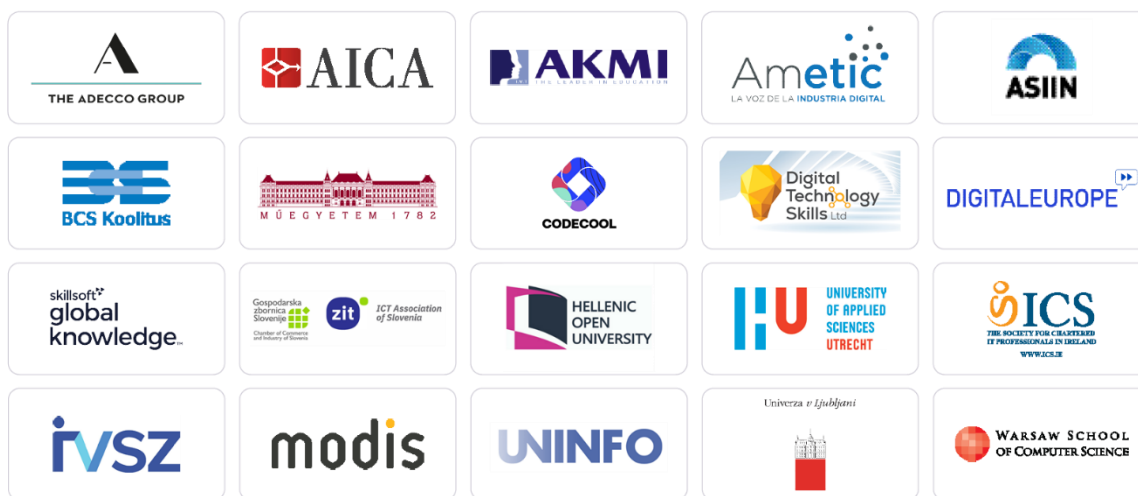


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List of abbreviations and acronyms

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 Executive Summary

1.1 Introduction

The “Train the Trainer Programme” was designed to facilitate the alignment of trainers, teachers and educators with the knowledge, approach, objectives, learning outcomes and materials relevant to deliver the ESSA Learning Programmes at EQF 4, 5 and 6 developed under the task 4.1 “Design and develop ESSA Learning Programmes to implement the new curricula”.

This document — and the eight related Annexes — was produced within the overall implementation of Work Package 4 “ESSA Learning Programmes, Testing & Rollout” under the European Software Skills Alliance (ESSA) project and specifically refers to task 4.1.4 “Design and Supporting Train the Trainer Programme”.

The contents and information are organised as follows.

Chapter two provides additional information concerning the overall purpose addressed by this document and an overview of the relation with other relevant tasks and deliverables realised within the ESSA project.

Chapter three includes:

- Short presentation of the Educational Profiles (each developed according to specific EQF Levels) referred to the ESSA Learning Programmes at EQF 4/5 and 6.
- General overview of the ESSA Learning Programmes at EQF 4/ 5 and 6 developed for each Educational Profile and EQF level, highlighting the specific type of target groups.
- Sources of reference: overview of the main documents to be consulted and related links.

Contents provided in each of the **eight annexes** are aimed at supporting trainers, teachers and educators when delivering the proposed ESSA Learning Programmes.

Each annex presents **the ESSA Learning Programmes** designed for each educational profile - at a specific EQF level – and includes the following information:

- Type of target group addressed (learners);
- Overview of each specific Learning Programme (Objective, Total number of Programme; Learning Outcomes concerned, Total Learning Units, Overall duration; Total number of ECTS; Targeted learning providers);
- Specific Learning Programme, organised in Learning Units, for each Programme Learning Outcome (PLO) addressed by the Educational Profile at a specific EQF level.

In this regard, the following are provided for each specific **Programme Learning Outcome (PLO)**:

- Overall information (number 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).

1.2 Target groups

The contents of this document are relevant for the following target groups:

- Teachers, trainers, educators working in the field addressed by the ESSA project, who need to be upskilled/reskilled;
- Learning providers of all types (VET, HE, public and private) delivering learning programmes to individuals and in the context of organisations.

1.3 Objective

The overarching objective of this document is to provide the indicated target groups (please refer to 1.2) with a “guide/ready to use package” including all the useful information they need to deliver the ESSA Learning Programmes provided for each Educational Profile at a specific EQF level.

Moreover, the information included in this document is useful for:

- supporting the pilots of the ESSA Learning Programmes as defined under task 4.2 “Pilot the ESSA Learning programme”;
- facilitating the testing, evaluating and review processes of the ESSA Learning Programmes and ESSA learning materials proposed for each Educational Profile.

1.4 Conclusions

The Train the Trainer Programme – including eight annexes – supports the implementation of the pilot and soft pilot actions planned in the project workplan (task 4.2 “Pilot the ESSA learning programme”), by providing the information necessary to:

- facilitate the reskilling/upskilling of trainers, teachers and educators;
- support trainers, teachers, educators and organisations in arranging and running new Learning Programmes at national and regional/local level;
- contribute to the testing and final designing of specific Educational Profile Learning Programmes - and related learning materials – designed within the ESSA project, that could be used by different types of entities concerned with educational and training aspects (public and private located in different EU Countries).

1.5 Use of this document

This deliverable – including the eight annexes - can be adopted by ESSA Associated Partners to implement soft pilot versions of the programme (e.g., piloting only a portion of it limited to specific PLOs or Learning Units). It provides the Consortium and Associated Partners with the relevant tools to identify the learning objectives, contents and material to be used to deliver a programme or part of it.

The document also supports the European Mobility Programme (Task 6.2) component of the project in facilitating the identification of contents and learning activities that might be part of a transferrable element.

2 Introduction

This document provides teachers, educators and trainers working in formal and non-formal learning contexts with the information necessary to implement the ESSA Learning Programmes at EQF levels 4/5 and 6.

Since the professionals addressed have a high level of previous preparation and qualification, the contents provided are meant:

- to support the delivery of the ESSA Learning Programmes at EQF 4/5 and 6 designed for each Educational profile developed at a specific EQF level, to which each annex is related;
- to give “inputs” to plan and design any action aimed at supporting the reskilling of teachers, educators and trainers;
- to provide learning materials and programmes designed on specific Learning Outcomes, to support the integration of existing learning pathways.

Consistently with the points above mentioned, this deliverable must be considered as closely related to other tasks – and related deliverables - from WP3, WP4 and WP6 (figure 1). These relations are mentioned, when relevant, in this document (please refer, in particular, to [§ 3.6](#)).

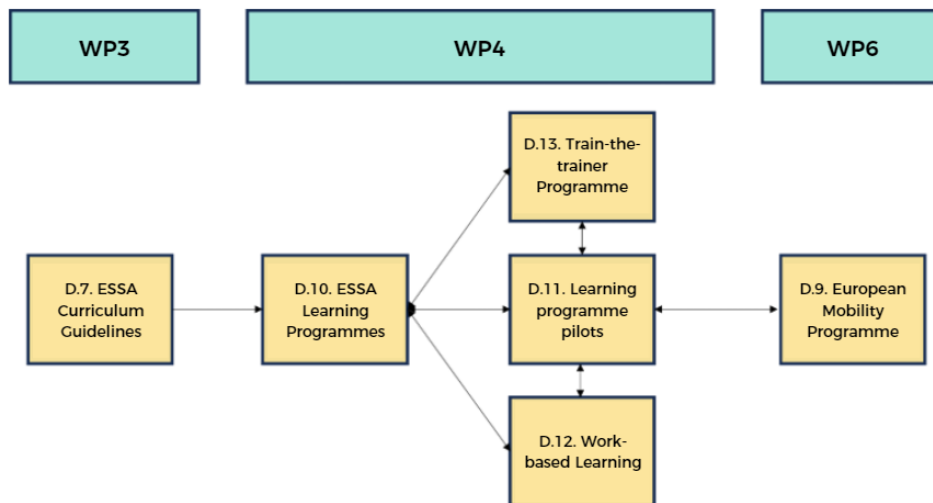


Figure 1. Relations and cross contributions among work packages and tasks

3 ESSA Educational Profiles

This chapter presents in details the Educational Profiles designed within the project, in order to provide a full understanding of the ESSA Learning Programmes designed.

The contents and information are organised as follows.

- Short presentation of the four Educational Profiles concerned (Developer, DevOps expert, Solution Designer, Test Specialist). For Each Educational profile is also provided a short description focused on the specific EQF level (Junior Developer EQF 4/5, Developer EQF 6, Developer EQF 7, DevOps expert EQF 6, DevOps expert EQF 7, Solution Designer EQF 6, Solution Designer EQF 7, Test Specialist EQF 4/5).
- Overview of the proposed Learning programmes for Educational profile and EQF level. Tables provide a general view (e.g Target groups, Learning context, Total of LUs, Total duration/hours, Total ECTS). To consult full Learning Programmes it is necessary to refer to the Annexes.

3.1 Developer

Software developers build and create computer programs, including mobile applications, desktop applications, hybrid applications, or even sometimes operating systems. They may also be involved in other aspects of software development, including identifying user needs, software design, new software testing, software implementation, and system modifications. Software developers play a critical role in many professional fields such as computer systems, manufacturing, finance, and software publishing.

JUNIOR DEVELOPER EQF 4/5

Junior developers support all aspects of software development stages: development, testing, implementation and maintenance of basic software solutions. They master the codebase, attend design meetings, write basic code, and fix bugs. They have an inquisitive attitude, oversee consistency, and work in an organised manner within clear boundaries.

DEVELOPER EQF6

Software developers at the Bachelor level develop, test, implement and maintain basic software solutions in accordance with customer needs. They may be also involved in the design of these applications. They account for others' development activities.

DEVELOPER EQF7

Software developers at the Master level develop, test, implement, and maintain advanced/innovative software solutions in accordance with customer needs. They may be also involved in the design of the applications. Developers at the Master level have a deeper knowledge of one or more technologies, e.g. mobile computing, cloud technologies, Internet of Things, artificial intelligence, and blockchain. They also oversee development and integration processes and projects and may initiate, plan, and coordinate such processes and projects..

3.2 DevOps

DevOps experts create an efficient workflow and cooperation between software development and IT operations to accelerate delivery and enhance the quality of the solutions and services. Doing so reduces the time between committing a change to a system and the change being

implemented in the production environment. DevOps experts strive for continuous deployment and apply specific methods, practices, and tools, such as agile ways of working, shared ownership, and workflow automation.

DEVOPS EXPERT EQF6

DevOps experts at the Bachelor level develop, test, and deploy solutions in close collaboration with the operations team and consider the multi-disciplinary nature of the context. They account for others' development activities.

DEVOPS EXPERT EQF7

DevOps experts at the Master level create and manage the integration and testing lifecycle of hardware, software, or sub-system components into an existing or new system.

3.3 Solution Designer

Solution designers specify appropriate IT solutions for a specific business or organisation context based on a thorough understanding of the business, processes, technology and customer needs and requirements, translating business requirements into IT solutions. Solution designers do this such that these solutions fit well in the business landscape (e.g. in line with strategy, mission, organisation, needs, requirements) as well as ICT. Solution designers are well-informed about the latest developments and trends in the IT field, as well as services offered by the market. They work between business and IT.

SOLUTION DESIGNER EQF6

Solution designers at the Bachelor level are aware of the interests and needs of different stakeholders and carefully balance these in the proposal for an IT solution. They communicate and cooperate with customers, users and specialists, supporting them and guiding the IT solution through the different stages of development and implementation.

SOLUTION DESIGNER EQF7

Solution designers at the Master level oversee the bigger picture of the business, market and technology. They creatively develop innovative solutions, incorporating the latest trends and technologies if necessary and applicable. They combine a strategic vision with resource optimisation. They have an overview of different processes and projects and may initiate, plan and coordinate such processes and projects.

3.4 Test Specialist

Test specialists ensure that software applications and solutions comply with technical, and user needs and specifications. They design, execute, and record tests for software applications or services and report the results in a well-organised manner. They also interact with different stakeholders (e.g. developers, and users) and knows how to communicate their findings effectively.

TEST SPECIALIST EQF 4/5

Test specialists at the entry-level develop scenarios for testing the software. They choose an appropriate test form, such as unit test, integration test or acceptance test, as well as an appropriate testing method. They determine what is needed for testing, such as the test environment, resources, and test data. They also perform the test(s), interpret the findings, and draw conclusions. During the process, they proactively communicate with the parties involved. They have an inquisitive attitude, oversee consistency, and work in an organised manner within clear boundaries.

3.5 Overview of the proposed Learning Programmes for Educational profile and EQF level

The following table provides a general overview of the ESSA Learning Programmes developed for each educational profile and EQF level, highlighting the specific type of target groups addressed. Complete, detailed information is provided in each related Annex.

Jr Developer EQF 4/5 (Annex I)				
Target groups	Total n. of LUs	Total duration (hours)	Total ECTS	Learning context
Students with an ICT background	14	200	8	non formal education
Unemployed adults and young people aged 16 to 29 who are not currently working or studying	13	92	4	non formal education
Workers on upskilling/reskilling paths	13	min 212	min 8	non formal education +formal education
Developer EQF 6 (Annex II)				
Target groups	Total n. of LUs	Total duration (hours)	Total ECTS	Learning context
IT-oriented students	11	73,5	3	formal education
People without ICT knowledge that want to reskill themselves quickly	4	216	8	non formal education
Developer EQF 7 (Annex III)				
Target groups	Total n. of LUs	Total duration (hours)	Total ECTS	Learning context
Developer full stack curriculum: Post graduate students with the purpose to upskill or reskill with developer full stack competences	24	min 300	min 12	formal education

Developer database curriculum: Post graduate students with the purpose to upskill or reskill with developer full stack competences	22	min 337,5	min 13,5	formal education
DevOps EQF 6 (Annex IV)				
Target groups	Total n. of LUs	Total duration (hours)	Total ECTS	Learning context
People with ICT knowledge in need of reskilling to become DevOps expert	2	168	min 6	non formal education
IT-oriented students	9	13,5	1	formal education
Students and professionals in need of upskilling/reskilling	15		min 10	non formal education
DevOps EQF 7 (Annex V)				
Target groups	Total n. of LUs	Total duration (hours)	Total ECTS	Learning context
University students and professionals: graduates of Software Engineering Undergraduate Programmes	13	min 375	min 15	formal education
Solution Designer EQF 6 (Annex VI)				
Target groups	Total n. of LUs	Total duration (hours)	Total ECTS	Learning context
IT-oriented students	22	min 48	min 3	formal education
Solution Designer EQF 7 (Annex VII)				
Target groups	Total n. of LUs	Total duration (hours)	Total ECTS	Learning context
University students interested in advanced tech studies and professionals seeking upskilling/reskilling opportunities	16	min 100	min 4	formal education
Test Specialist EQF 4/5 (Annex VIII)				
Target groups	Total n. of LUs	Total duration (hours)	Total ECTS	Learning context
University students and professionals on upskilling/reskilling paths	17	min 120	min 5	non formal education

Table 1. General overview of the ESSA Learning Programmes

3.6 Source of reference

To consult the full and detailed Train of the Trainer Programme designed for each ESSA Educational profile and related learning materials, please refer to the following information:

Educational Profile	Document Title	Reference	Link to Learning materials
Jr Developer EQF 4/5	Train the Trainer Programme Annex I Junior Developer EQF 4/5	Annex I	https://learn.softwareskills.eu/
Developer EQF 6	Train the Trainer Programme Annex II Developer EQF 6	Annex II	
Developer EQF 7	Train the Trainer Programme Annex III Developer EQF 7	Annex III	
DevOps expert EQF 6	Train the Trainer Programme Annex IV DevOps expert EQF 6	Annex IV	
DevOps expert EQF 7	Train the Trainer Programme Annex V DevOps expert EQF 7	Annex V	
Solution Designer EQF 6	Train the Trainer Programme Annex VI Solution Designer EQF 6	Annex VI	
Solution Designer EQF 7	Train the Trainer Programme Annex VII Solution Designer EQF 7	Annex VII	
Test Specialist EQF 4/5	Train the Trainer Programme Annex VIII Test Specialist EQF 4/5	Annex VIII	

Table 2. ESSA Educational Profiles and related learning material

The following documents produced within the ESSA project should also be consulted, since they are closely tied to the proposed Train the Trainer Programme:

1. ESSA Learning programmes - Deliverable 10 “ESSA Learning Programmes & Materials”

Document title	Description	Link
ESSA Learning Programmes - Deliverable 10 “ESSA	The document provides a general overview and introduction to the Educational Profiles addressed by the ESSA project and a general	

Learning Programme & Material”	<p>presentation of each ESSA Learning Programme designed for each Educational Profile.</p> <p>The document includes eight annexes, each of which details the ESSA Learning Programme/s – and related Learning materials - developed for each Educational Profile at a specific EQF level, focusing on the type of target group (learners) and learning providers.</p>	https://www.softwareskills.eu
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Table 3. ESSA Learning Programmes (Deliverable 10) - Overview

2. ESSA Learning programmes - Deliverable 10 “ESSA Learning Programmes & Materials” – Annexes

Educational Profile	Document Title	Reference	Link
Jr Developer EQF 4/5	ESSA Learning Programmes Annex I Junior Developer EQF 4/5	Annex I	https://www.softwareskills.eu
Developer EQF 6	ESSA Learning Programmes Annex II Developer EQF 6	Annex II	
Developer EQF 7	ESSA Learning Programmes Annex III Developer EQF 7	Annex III	
DevOps expert EQF 6	ESSA Learning Programmes Annex IV DevOps expert EQF 6	Annex IV	
DevOps expert EQF 7	ESSA Learning Programmes Annex V DevOps expert EQF 7	Annex V	
Solution Designer EQF 6	ESSA Learning Programmes Annex VI Solution Designer EQF 6	Annex VI	
Solution Designer EQF 7	ESSA Learning Programmes Annex VII Solution Designer EQF 7	Annex VII	
Test Specialist EQF 4/5	ESSA Learning Programmes Annex VIII Test Specialist EQF 4/5	Annex VIII	

Table 4. ESSA Learning Programmes (Deliverable 10, Annexes) – overview

3. ESSA Educational Profiles

The ESSA Educational Profiles developed within the project are available on project website at the following link: <https://www.softwareskills.eu/library/essa-educational-profiles-for-software-roles/>.

The eight Educational Profiles are presented there, covering four software roles at different qualification levels (EQF 4-7). Each profile is described in terms of expected competences, deliverables to be mastered by learners, professional and educational perspectives, Programme Learning Outcomes (PLOs) covered by the proposed training courses, unit learning outcomes for each PLO and related assessment methods.

4. ESSA Deliverable 11 “Learning programme pilots”

The report discusses how these pilot programmes are being carried out in eight European countries (France, Estonia, Greece, Ireland, Italy, Netherlands, Poland, Slovenia), from September 2023 to June 2024, evaluated, and serve as a key tool to experiment and optimise the materials and resources developed by the ESSA Alliance (<https://www.softwareskills.eu>)

5. ESSA Deliverable 12 “ESSA Work-based Learning”

The document describes the primary types of WBL, elucidating the way these components are described and integrated into the ESSA learning programmes (Task 4.3). It categorizes WBL components according to ESSA profiles, offering an overview of the most frequently used ones. Furthermore, the document provides recommendations on designing WBL components and elucidates the best practises to follow in ESSA learning programmes (<https://www.softwareskills.eu>).

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