

European Software Skills Alliance.

EDUCATIONAL PROFILE

ESSA Technical software specialist EQF 4/5

This educational profile belongs to the field of Software Engineering and is covered by relevant references in EN 16234-1:2019 (e-CF) and ISO/IEC/IEEE 90003:2018. More specific: ISO/IEC 20000 (all parts) Information technology — Service management and ITIL Framework

Technical specialists deploy, support, maintain and repair software (mobile, desktop or hybrid applications) and corresponding infrastructure in a timely and effective way to ensure optimal system performance and superior customer satisfaction. They are an **important link between end users, software developers and infrastructure admins in systems deployment, incident and problem management.**

Technical (software) specialists at entry-level assist software systems users and software and hardware deployers with all aspects of software application implementation, support, and maintenance. Primarily, they provide user support and incident management for the software system and corresponding technology environment. They have an inquiring attitude, oversee the coherence, and work in a structured manner within clear boundaries.

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The Erasmus+ project ESSA (European Software Skills Alliance) aims to skill, upskill, and reskill individuals into high-demand software roles across the EU.



About this profile



This profile is for educating people with or without previous ICT knowledge to maintain and repair software and service applications.

The profile has an EQF 4/5 level. No prior knowledge on the topic is required.

This level requires:

- **Autonomy:** Works independently within specified boundaries and resolves issues which arise from project activities.
- **Context:** Structured – predictable context, well-defined concrete, and abstract problems.
- **Content:** Common factual and theoretical knowledge that underpins the field of work or vocation in the local situation.

Competences

e-CF competences (incl. e-CF level)	General competences (incl. EQF level)
C.4. Problem Management [e-2]	P. Profession-related competences (EQF5)
C.5. Systems Management [e-2]	I.S. Interpersonal soft competences (EQF5)
C.3. Service Delivery [e-2]	P.S. Personal soft competences (EQF5)
B.4. Solution Deployment [e-2]	F.O. Functioning in organisations (EQF5)
C.1. User Support [e-2]	
C.2. Change Support [e-2]	
E.3. Risk Management [e-2]	
E.6. ICT Quality Management [e-2]	

Deliverables

Learners should master the following deliverables:

- Solved incident
- Recommended actions or measures to improve service reliability
- (Part of) release documentation
- Solution for a user problem
- Appropriate measures to reduce the impact of changes
- Report on the outcomes of service delivery analysis
- Documentation used in ICT service delivery
- Risk analysis
- Appropriate actions to handle risk
- Report on the application of a method, technique or tool related to a new technology
- Self-reflection report
- Report on functioning in an organisation

Professional perspectives

Upon completing this programme, the learner is eligible to apply for **junior positions**, such as Technical Software Specialist - 1st and 2nd level Customer Support - Application Support Specialist - Application Trainer - System administrator

Educational perspectives

The learner may continue in a **broad variety of Bachelor programmes** with a focus on more advanced tools, technologies and architectures.

The learner also has a proper base for further training and certification ranging from SW development to IT systems operations and hardware/networks admin and support.

Programme Learning Outcomes (PLO)

1. PLO Application Design [e-2]

The learner has demonstrated capability

→ to act systematically in handling incidents and problems

Unit learning outcomes	Identifies, classifies and records incidents, applying relevant methods, techniques, and tools (e.g., tools for troubleshooting; diagnostic tools; cataloguing incidents by symptom and resolution; incident and problem reports)
	Systematically resolves or escalates incidents and problems, resulting in a solved incident (e.g., by applying techniques and tools for troubleshooting such as diagnostic tools)

2. PLO Systems management [e-2]

The learner has demonstrated capability

→ to fulfil operational needs related to the IT system and services

→ to ensure a proper and secure operation

Unit learning outcomes	Works systematically to fulfil the organisation's operational needs related to the IT system and services, applying relevant methods, tools, and techniques (e.g., add, remove, or update user account information, resetting passwords; configure, add, delete file systems; administration of resources, users, and authentications; identity and access management)
	Ensures a proper and secure operation of the IT system and its applications (e.g., by monitoring; analysing system logs, identifying potential security issues)

3. PLO Service delivery [e-2]

The learner has demonstrated capability

→ to monitor and analyse service delivery

→ to recommend actions to improve the service reliability

Unit learning outcomes	Monitors and analyses the service delivery of a system, applying relevant tools and techniques and taking into account relevant issues (e.g., by using monitoring tools; by updating operational document library; logging service incidents; in accordance with SLA)
	Identifies (potential) service level failures and security risks and recommends actions or measures to improve service reliability

4. PLO Solution deployment [e-2]

The learner has demonstrated capability

→ to implement (parts of) a solution or software application or component

→ to provide (part of) release documentation

Unit learning outcomes	Executes (parts of) a solution/ software release, applying appropriate methods, techniques, and tools (e.g., tools related to automated software release, software packaging and distribution tools; configuration)
	To ensure a proper deployment process at operational level (e.g., by identifying failing components, faults, incompatibilities or losses; debugging; ensuring interoperability)
	Writes (parts of) release documentation

5. PLO User support [e-2]

The learner has demonstrated capability

→ To address user problems

Unit learning outcomes	Systematically interprets user problems and identifies solutions (e.g., by applying techniques and tools for troubleshooting such as diagnostic tools; by escalating)
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| Interacts with the user

6. PLO Problem management [e-2]

The learner has demonstrated capability

→ to act systematically to minimise the impact of changes to a service or software application or component

Unit learning outcomes	Selects, proposes, and applies appropriate measures to reduce the impact of changes (e.g., in case of software modifications, upgrades)
	During change, acts systematically and flexibly to ensure a proper change process at operational level (e.g., by responding to operational needs, avoiding or minimising service disruptions, maintaining coherence to SLA and information security requirements)

7. PLO Risk management [e-2]

The learner has demonstrated capability

→ to apply risk management principles

→ to perform a common risk analysis of ICT solutions and services

→ to propose actions to handle risks

Unit learning outcomes	Applies practices, principles, methods, tools, and techniques related to risk management
	Performs a risk analysis with identification and assessment of risks of IT solutions and services
	Proposes appropriate actions to handle risks and/or formulates (parts of) a risk management plan

8. PLO Quality management [e-2]

The learner has demonstrated capability

→ to monitor compliance with quality measures

Unit learning outcomes	Monitors and acts upon quality indicators
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9. PLO Profession related competences [EQF5]

The learner has demonstrated capability

→ to apply profession related skills

Unit 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

10. PLO Soft competences [EQF5]

The learner has demonstrated capability

→ to apply soft skills

Unit 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.

11. PLO Functioning in organisations [EQF5]

The learner has demonstrated capability

→ to function in an organisational context

Unit 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 organisation**

Assessments

Unit learning outcome	Assessment method	Validation of prior acquired competences (skills and knowledge)
1.1	Practical assignment	Assessment (of skills)
1.2	Practical assignment	Assessment (of skills)
2.1	Practical assignment	Assessment (of skills)
2.2	Practical assignment	Assessment (of skills)
3.1	Practical assignment	Assessment (of skills)
3.2	Practical assignment	Assessment (of skills)
4.1	Practical assignment	Assessment (of skills)
4.2	Practical assignment	Assessment (of skills)
4.3	Practical assignment	Assessment (of skills)
5.1	Exam	Certification
5.2	Practical assignment	Assessment (of skills)
6.1	Exam	Certification
6.2	Practical assignment	Assessment (of skills)
7.1	Practical assignment	Assessment (of skills)
7.2	Practical assignment	Assessment (of skills)
7.3	Practical assignment	Assessment (of skills)
8.1	Practical assignment	Assessment (of skills)
9.1	Exam	Certification
9.2	Practical assignment	Assessment (of skills)
9.3	Report	Assessment (of report)
10.1	Exam	Certification
10.2	360° assessment	360° assessment
10.3	Practical assignment	Assessment (of skills)
10.4	Practical assignment	Assessment (of skills)
10.5	Exam	Certification
11.1	360° assessment	360° assessment
11.2	360° assessment	360° assessment
11.3	Exam	Certification
11.4	Practical assignment	Assessment (of skills)
11.5	Self-reflection report	Assessment (of report)
12.1	Exam	Certification
12.2	Exam	Certification
12.3	360° assessment	360° assessment
12.4	Report	Assessment (of report)