

European Software Skills Alliance.

EDUCATIONAL PROFILE ESSA Solution designer EQF 7

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.

Solution designers specify appropriate **IT solutions for a specific business or organisation context**, based on a thorough understanding of the **business, processes, technology, and needs and requirements** of the customer, thus **providing the translation of business requirements into IT solutions**. Solution designers do this in such a way that these solutions fit well in the landscape of the business (in line with e.g., 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 the services the market offers. They operate in between business and IT.

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

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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



The profile is for educating people, with prior obtained ICT knowledge at EQF 6 level to propose and design ICT-solutions taking into account business requirements and ICT architecture.

The profile has an **EQF 7 level**. Specific ICT knowledge and skills related to the role of solution designer obtained at EQF 6 level are required.

This level requires:

- **Autonomy:** Coordinates and directs. Addresses issues with many interacting factors.
- **Context:** Unstructured multidisciplinary and/or specialist context.
- **Content:** New concepts for deepening and innovation that are transferable to other situations.

Competences

e-CF competences (incl. e-CF level)	General competences (incl. EQF level)
A.5. Architecture Design [e-4]	P. Profession-related competences (EQF7)
A.9. Innovating [e-4]	I.S. Interpersonal soft competences (EQF7)
D.11. Needs Identification [e-4]	P.S. Personal soft competences (EQF7)
	F.O. Functioning in organisations (EQF7)

Deliverables

Learners should master the following deliverables:

- Advisory report: creative proposal with possible solutions to specific business need(s), considering advanced/innovative methods and technologies
- Architecture design for an innovative/ advanced solution or technology
- Technology roadmap
- Idea proposal and idea evaluation
- Product innovation plan
- Proof of Concept
- Report with recommendations or advice on a solution that involves the application of a new technology
- Critical reflection on a new technology
- Project plan for the design and development of an advanced/ innovative solution, application, or software component
- Self-reflection report
- Report on functioning in the organisation

Professional perspectives

Upon completing this programme, the learner is eligible to apply for positions related to the combination between business & IT, such as: Solution Designer - Business & IT Consultant - Business & IT Engineer

Educational perspectives

The learner may continue in a **related Master's programme**, in a PhD programme or in an (in-service) postgraduate study programme.

Programme Learning Outcomes (PLO)

1. PLO Needs Identification [e-4]

The learner has demonstrated capability

→ to propose different creative solutions for complex problems and

→ to advise the customer

Unit learning outcomes	Guides the process of identification of customer needs in line with the overall business (e.g, market, strategy, value proposition)
	Writes an advisory report with a creative proposal with possible solutions to specific business need(s) , considering advanced/innovative methods and technologies (e.g. by comparing and analysing different solutions/ suppliers, weighing costs/benefits, clarifying value proposition)
	Guides the process of identification of customer needs in line with the overall business (e.g, market, strategy, value proposition)

2. PLO Architecture design [e-4]

The learner has demonstrated capability

→ to propose a coherent architecture design

→ to specify a structured approach to implement an ICT solution

Unit learning outcomes	Proposes a coherent architecture design for an innovative/ advanced solution or technology , taking into account relevant business and technological issues (e.g., business evolution and needs, budget and other resources; current technology, obsolescent equipment)
	Develops a technology roadmap ; an approach or strategy to implement a solution or technology (e.g., identifies change requirements, components affected/ involved by the implementation of specific solutions/ services)

3. PLO Innovating [e-4]

The learner has demonstrated capability

→ to propose and evaluate creative ideas on the application of novel technologies

→ to develop a product innovation plan

→ to design a Proof of Concept

Unit learning outcomes	Applies idea generation and evaluation techniques to propose and evaluate creative ideas on the application of novel technologies – formulates an idea proposal and idea evaluation
	Writes a product innovation plan on the exploitation of technological advances to introduce a new business, product or service.
	Designs and executes a Proof of Concept to check feasibility of product innovation

4. PLO Profession related competences [EQF7]

The learner has demonstrated capability

→ to apply profession related skills

Unit learning outcomes	Advises on the application of a new technology . Given a certain situation or context, writes a report with recommendations or an advice on a solution that involves the application of a new technology. Reflects critically on a new technology
	Analyses, improves, and provides expert advice and guidance on security standards, regulations, measures, methods, tools, and techniques, taking into account the broader business context and current IT developments
	Analyses, improves, and provides expert advice and guidance on sustainability standards, regulations, measures, and methods, taking into account the broader business context and current IT developments
	Is continuously aware of ethical considerations and issues and applies these in professional contexts and activities. Forms and communicates an opinion based on incomplete and or limited information, taking into account social, scientific and ethical responsibilities related to the application of own knowledge and opinions. Promotes ethical thinking

5. PLO Soft competences [EQF7]

The learner has demonstrated capability

→ to apply soft skills

Unit learning outcomes	Related to the occupation, knowledge domain, and field of science critically collects: in-depth and detailed professional and scientific information on a range of basic theories, principles and concepts, as well as information on some important current issues and topics. Analyses , evaluates, and combines critically this information, knowledge and insights and presents this in a scientific way. Critically applies/ translates/ interprets results of research (possibly executed by others) to the own context (the occupation and/or knowledge domain). Executes detailed scientific research
	Exercises (self-)management in situations that are complex, unpredictable and require new strategic approaches. Is able to cope with change (positive or negative), to adapt to a considerable level of variety in the workplace and to transform the work or study context. Handles pressure and setbacks and maintains composure. Shows initiative, creativity and originality and carries responsibility for the results of own activities, work and or study and for the work results of others. Works correctly and carefully, fully aware of the importance of trustworthiness and accountability.
	Realises learning and personal development , mostly autonomous and based on intrinsic motivation, looking for personal learning objectives. Selects and uses training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

6. PLO Functioning in organisations [EQF7]

The learner has demonstrated capability

→ to function in an organisational context

Unit learning outcomes	Explains organisation theory and behaviour
	Describes the relationship between business and IT
	Works in an organisational context under broad direction, performing coordinating activities, with at least 3 years of working experience at an intermediate or senior level, as e.g., a specialist, team leader, manager, or a comparable role
	Leads a project
	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	Report	Assessment (of report)
2.1	Practical assignment	Assessment (of skills)
2.2	Report	Assessment (of report)
3.1	Practical assignment	Assessment (of skills)
3.2	Practical assignment	Assessment (of skills)
3.3	Practical assignment	Assessment (of skills)
4.1	Report	Assessment (of report)
4.2	Report	Assessment (of report)
5.1	360° assessment	360° assessment
5.2	Practical assignment	Assessment (of skills)
5.3	Practical assignment	Assessment (of skills)
5.4	360° assessment	360° assessment
6.1	Practical assignment	Assessment (of skills)
6.2	Self-reflection report	Assessment (of report)
7.1	Exam	Certification
7.2	Exam	Certification
7.3	360° assessment	360° assessment
7.4	Report	Assessment (of report)