Curriculum for

Certified Professional for Software Architecture (CPSA)®
Advanced Level

Module
API

Application Programming Interfaces

2025.1-RC2-EN-20241215

Table of Contents

List of Learning Goals

Introduction: General information about the iSAQB Advanced Level

What is taught in an Advanced Level module?

The module can be attended independently of a CPSA-F certification.

- The iSAQB Advanced Level offers modular training in three areas of competence with flexibly designable training paths. It takes individual inclinations and priorities into account.
- The certification is done as an assignment. The assessment and oral exam is conducted by experts appointed by the iSAQB.

What can Advanced Level (CPSA-A) graduates do?

CPSA-A graduates can:

- Independently and methodically design medium to large IT systems
- In IT systems of medium to high criticality, assume technical and content-related responsibility
- Conceptualize, design, and document actions to achieve quality requirements and support development teams in the implementation of these actions
- Control and execute architecture-relevant communication in medium to large development teams

Requirements for CPSA-A certification

- Successful training and certification as a Certified Professional for Software Architecture, Foundation Level® (CPSA-F)
- At least three years of full-time professional experience in the IT sector; collaboration on the design and development of at least two different IT systems
  - Exceptions are allowed on application (e.g., collaboration on open source projects)
- Training and further education within the scope of iSAQB Advanced Level training courses with a minimum of 70 credit points from at least three different areas of competence
- Successful completion of the CPSA-A certification exam

Essentials

What does the module “API” convey?

The module presents API to the participants … At the end of the module, the participants know … and are able to …

Curriculum Structure and Recommended Durations

Content	Recommended minimum duration (minutes)
1. Introduction	180
2. xz	150
3. Lots of theory	120
4. xy and example	180
5. abc und d	210
6. Final example	120
Total	960 (16h)

Duration, Teaching Method and Further Details

The times stated below are recommendations. The duration of a training course on the API module should be at least 2 days, but may be longer. Providers may differ in terms of duration, teaching method, type and structure of the exercises, and the detailed course structure. In particular, the curriculum provides no specifications on the nature of the examples and exercises.

Licensed training courses for the API module contribute the following credit points towards admission to the final Advanced Level certification exam:

Methodical Competence:	10 Points
Technical Competence:	10 Points
Communicative Competence:	0 Points

Prerequisites

Participants **should** have the following prerequisite knowledge:

- Prerequisite 1
- Prerequisite 2, etc.

Knowledge in the following areas may be **helpful** for understanding some concepts:

- Area 1:
  - Knowledge 1
  - Experience 2
  - Knowledge 3

- Experience 4
- Understanding 5

Structure of the Curriculum

The individual sections of the curriculum are described according to the following structure:

- **Terms/principles**: Essential core terms of this topic.
- **Teaching/practice time**: Defines the minimum amount of teaching and practice time that must be spent on this topic or its practice in an accredited training course.
- **Learning goals**: Describes the content to be conveyed including its core terms and principles.

This section therefore also outlines the skills to be acquired in corresponding training courses.

Supplementary Information, Terms, Translations

To the extent necessary for understanding the curriculum, we have added definitions of technical terms to the iSAQB glossary and complemented them by references to (translated) literature.

1. Why APIs are important

Duration: XXX min	Practice time: XXX min

1.1. Terms and Principles

Term 1, Term 2, Term 3

1.2. Learning Goals

LG 1-1: The is the first learning goal, in category xy

tbd.

1.3. References

[bass], [bachmann], [kruchten], [starke]

2. How APIs are Creating Value

Duration: 90 min	Practice time: 30 min

2.1. Terms and Principles

Term 1, Term 2, Term 3

2.2. Learning Goals

LG 1-1: The is the first learning goal, in category xy

tbd.

2.3. References

[API Business Models]

3. API Styles and Technologies

Duration: 60 min	Practice time: 30 min

3.1. Terms and Principles

Term 1, Term 2, Term 3

3.2. Learning Goals

LG 3-1: TBD

tbd.

LG 3-2: TBD

tbd.

3.3. References

[hargis], [starke]

4. API Design

Duration: 90 min	Practice time: 30 min

4.1. Terms and Principles

Term 1, Term 2, Term 3

4.2. Learning Goals

LG 4-1: TBD

tbd.

LG 4-2: TBD

tbd.

4.3. References

[Geewax 2021], [Zimmermann et al. 2022]

5. Description of APIs

Duration: 90 min	Practice time: 30 min

5.1. Terms and Principles

Term 1, Term 2, Term 3

5.2. Learning Goals

LG 5-1: TBD

tbd.

LG 5-2: TBD

tbd.

5.3. References

6. API Lifecycle and API Tooling

Duration: 90 min	Practice time: 60 min

6.1. Terms and Principles

Term 1, Term 2, Term 3

6.2. Learning Goals

LG 6-1: TBD

tbd.

LG 6-2: TBD

tbd.

6.3. References

7. API Security

Duration: 60 min	Practice time: 30 min

7.1. Terms and Principles

Communication security, TCP, HTTP, SSL/TLS, HTTPS, HTTP authentication, OAuth, OpenID Connect

7.2. Learning Goals

LG 7-2: TBD

tbd.

LG 7-2: TBD

tbd.

7.3. References

8. APIs at Scale: Platforms and Governance

Duration: 60 min	Practice time: 30 min

8.1. Terms and Principles

Term 1, Term 2, Term 3

8.2. Learning Goals

LG 8-1: TBD

tbd.

LG 8-2: TBD

tbd.

8.3. References

References

This section contains references that are cited in the curriculum.

A

- [API Business Models] "ProgrammableWeb's 2020 Guide to API Business Models", ProgrammableWeb, May 2020. https://www.mulesoft.com/sites/default/files/cmm_files/2020_Guide_to_API_Business_Models.pdf

G

- [Geewax 2021] JJ Geewax, "API Design Patterns", Manning Publications, 2021

Z

- [Zimmermann et al. 2022] Olaf Zimmermann, Mirko Stocker, Daniel Lübke, Uwe Zdun, Cesare Pautasso, "Patterns for API Design: Simplifying Integration with Loosely Coupled Message Exchanges", Addison-Wesley Professional, November 2022, ISBN 978-0-13767-010-9