

**Educational Package Specification:**

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# **Agile and projectized organisations in the digital era (APODE)**

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Within the Erasmus+ Knowledge Alliance ProDiT – Projects for the Digital Transformation

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## 1. Summary

The **Educational Package “Agile and projectized organisations in the digital era (APODE)”** delivers the competences for managing the digital transformation of organisations and managing within digitally transformed organisations.

**Overall Learning Outcome:** Participants will learn:

- to manage the digital transformation of an organisation to a higher maturity level with projects
- to manage the work within agile and projectized organisations, e.g., by doing projects
- to develop organisational and individual knowledge and cope with the fast change

**Target Group Analysis:**

- Students in Master’s programmes need the competences in addition to their degree major, e.g., management, IT or engineering
- Professionals need the competences as they progress into leadership positions
- Consultants need the competences in order to analyse and support the digital transformation

**Competences & Learning Outcomes:** The main competences are:

- Knowledge about the methods, tools and processes for management in agile and projectized organisations
- Practical skills in order to plan and execute the digital transformation, including the management of digital transformation projects
- Scientific reflection about the issues and concepts behind agile and projectized organisations
- Ability to lead digital transformation in an organisation successfully

**Selection of Content:** Main topics addressed by the package:

- Agile Management in Virtual Project Environments
- Managing Digital Change
- Communication inside and outside of Organisations in the Digital Era
- Knowledge Management in Projectized Organisations
- Management Project on Organisational Transformation
- Scientific Methods and Tools for the Analysis of Transformation Processes and Maturity

**Concept and composition of the package:** The package is composed out of 2 mandatory modules, 1 elective (1 out of 2), a project (with project thesis) and a scientific seminar.

**Teaching Materials/Literature/Media/Technical Requirements/Lab Equipment:** Digital infrastructure for agile project management.

**Tailoring & Educational Tracks (Practical, Entrepreneurial, Scientific):** Tailoring options are focussing on the usage in Master's programmes (Scientific Track) or company trainings (Practical Track).

**Competence Assessment:** Competence assessment is done with online tests (including self-assessment), oral exams, project assignment reviews, presentation, writing of scientific papers/reports.

**Curricula Integration:** Educational programmes can integrate the package as:

- single modules as electives
- complete package as a 30 ECTS minor in Master's programmes
- project assignments

in educational programmes like Master's in Management or Business Administration, Master's in Project Management, Master's in Informatics, Business Informatics, Information Technology

**Quality Evaluation:**

Quality review by experts, evaluation of teaching activities

**Change History & Ownership:**

Release V1.0: Initial version of the specification of the edupack "Agile and projectized organisations in the digital era (APODE)", 09.09.2022

Release V2.0: Updated version of the specification of the edupack "Agile and projectized organisations in the digital era (APODE)", 31.03.2024

Release V3.0: Updated version of the specification of the edupack "Agile and projectized organisations in the digital era (APODE)", 20.07.2024

Release V4.0: Updated version of the specification of the edupack "Agile and projectized organisations in the digital era (APODE)", 23.11.2024

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## 2. Introduction to the educational package

The educational package (edupack) on “Agile and projectized organisations in the digital era (APODE)” delivers the relevant project management competences:

- to manage the digital transformation of an organisation to a higher maturity level with projects,
- to manage the work within agile and projectized organisations, e.g., by doing projects, and
- to develop organisational and individual knowledge and cope with the fast change.

The competence is delivered by providing:

- the mandatory module “Agile Management in Virtual Project Environments” (6 ECTS),
- the mandatory module “Managing Digital Change” (6 ECTS)
- the elective module (choose 1 out of 3) “Communication inside and outside of Organisations in the Digital Era” (6 ECTS)
- the elective module (choose 1 out of 3) “Knowledge Management in Projectized Organisations” (6 ECTS)
- the elective module (choose 1 out of 3) “Scientific Methods and Tools for the Analysis of Transformation Processes and Maturity” (6 ECTS)
- the team/individual project assignment “Management Project on Organisational Transformation” (12 ECTS)

The edupack addresses topics like:

- What is a “Digital Transformation (DT) Project”? What kind of DT projects are conducted in organisations?
- How does digital transformation in organisations proceed? How to plan and manage the digital transformation journey? What are maturity levels and how can maturity models be used for it?
- How do agile and virtual organisations work? What project management methods are needed and how are they adapted to the environment?
- How to deal with the vast and fast changing implicit and explicit knowledge?
- How to communication in such organisations and with customers?
- What are relevant sources of information about the topics? What are recent developments in the field? Is there key literature?

### 3. Educational package Description

#### 3.1 Overall Learning Outcomes

The main competences delivered by the edupac are (according to EQF [1][2]):

- Knowledge about the methods, tools and processes for management in agile and projectized organisations
- Practical skills in order to plan and execute the digital transformation, including the management of digital transformation projects
- Scientific reflection about the issues and concepts behind agile and projectized organisations
- Ability to lead digital transformation in an organisation successfully

Learning Outcomes/Competences need to consider several competence domains [3]:

- **Technical Competence:** This involves digital literacy in the relevant tools, project management tools and methods, scientific methods and tools.
- **Professional Competence:** This involves managerial competence, leadership skills, teamwork skills, and communication skills.
- **Global Competence:** This involves international and intercultural competences.

The **Overarching Learning Outcomes (OLO)** [5] cover all EIT OLOs (1-7).

#### 3.2 Target Group Analysis

The relevant target groups for the educational package are:

- Students in Master's programmes need the competences in addition to their degree major, e.g., management, IT or engineering
- Professional need the competences as they progress into leadership positions
- Consultants need the competences in order to analyse and support the digital transformation

#### 3.3 Competences & Learning Outcomes

The competences delivered by the educational package are a combination of the competences delivered by the included modules, projects and seminars:

Upon completion of this module, participants will have developed:

Knowledge:

- An understanding of the methods, tools, and processes necessary for management in agile and projectized organizations
- An understanding of digital transformation and digital transformation journeys, e.g., for new digital products and services, digital business models, digital customer journeys and

marketing, process transformation, organisational transformation, including soft factors and competences

- Understand digital change
- Know the relevant organisational theories and organisational development
- Understand virtual collaboration settings, especially in agile software development
- Develop deeper understanding of soft factors in team collaboration and team personalities
- Understand knowledge management in agile & projectized organisations

Skills:

- Plan and execute digital transformations, including managing projects specific to digital transformation
- Familiarity with agile project management, especially Scrum, DevOps
- Familiarity with change management and digital transformation
- Develop communication strategies and plans, communicate successfully inside and outside the projects and organisations.

Abilities and Attitudes:

- Competence to successfully lead digital transformation initiatives within an organization
- Insight into the issues and underlying concepts of agile and projectized organizations
- Ability to plan, lead and conduct digital change projects
- Develop competences of people, teams and organizations for the digital transformation
- Ability to develop digital strategies
- Ability to manage digital change sustainably and responsibly
- Ability to plan, lead and conduct virtual, agile projects

### **3.4 Content**

The main topics addressed by the package are represented by the modules:

- Agile Management in Virtual Project Environments
- Managing Digital Change
- Communication inside and outside of Organisations in the Digital Era
- Knowledge Management in Projectized Organisations
- Management Project on Organisational Transformation
- Scientific Methods and Tools for the Analysis of Transformation Processes and Maturity

### **3.5 Concept and composition of the package**

#### **A) Overall concept, curation of content, didactic concept**

The educational package follows the following concept and didactic formats (see Fig. 1):

- Knowledge about the methods, tools and processes for management in agile and projectized organisations will be provided within 2 mandatory eLearning modules and 1 (out of 3) elective eLearning modules. The educational resources will contain online courses, classical lecture slides, video courses, tutorials, reading materials etc.. Knowledge is delivered and also assessed with tests and exams. Prior knowledge is assessed with self-assessments.
- Practical skills are already addressed in the mandatory and elective modules by conducting team exercises and small project assignments. Industrial case studies are used.
- Practical skills (including overarching learning outcomes (OLOs), professional and global competences) are intensively trained by conducting a management project, usually as a student team, solving a realistic problem for an industrial case study, generating realistic work situations. The management project might be conducted cross-border in an international setting.
- The ability to lead the digital transformation and to fill certain roles in digital transformation projects is trained by preparing students for such roles, put them into the roles in project assignments, and by letting them reflect on the role afterwards.
- The scientific competences for analysing, reflecting and researching on the digital transformation in organisations are delivered with small scientific assignments (e.g., homework) in the mandatory and elective modules, an optional scientific seminar (including courses on research methods & tools, actual research tasks, and writing a scientific paper for a Master student conference), and a possible scientific thesis on the management project. This can be later continued into a scientific publication and/or a Master thesis.

**Format & Content**

**Competence & Learning Outcome**

<p>Theoretical knowledge (self-learning):</p> <ul style="list-style-type: none"> <li>• Online Module</li> <li>• Distance Learning Material</li> <li>• Lecture (real/virtual)</li> </ul>	<p>Learning Outcome: Know the SotA (State-of-the-Art) =&gt; knowledge</p>	<p><b>Main Format:</b> eLearning</p>
<p>Practical skills (Hands-on, Project):</p> <ul style="list-style-type: none"> <li>• Training (e.g. Tools)</li> <li>• Project (with industry)</li> <li>• (virtual) Lab</li> <li>• (professional certificates)</li> </ul>	<p>Learning Outcome: Projects, inter- disciplinary, international =&gt; skills</p>	<p><b>Main Format: Workshop/ Project/Block (Presence)</b></p>
<p>Scientific Work:</p> <ul style="list-style-type: none"> <li>• Seminar- or homework</li> <li>• Scientific publication (paper)</li> <li>• Report (e.g. survey)</li> </ul>	<p>Learning Outcome: Critical reflection, Scientific context =&gt; ability/attitude</p>	<p><b>Main Format: individual scientific contribution</b></p>

**Figure 1 Didactic Formats per Competence Area [see specification “Educational & Didactic Concept”]**



## B) Educational Elements

The package is composed out of:

- eLearning Modules (including online courses)
  - Agile Management in Virtual Project Environments (6 ECTS), mandatory
  - Managing Digital Change (6 ECTS), mandatory
  - Communication inside and outside of Organisations in the Digital Era (6 ECTS), elective
  - Knowledge Management in Projectized Organisations, 6 ECTS, elective
- Projects (including methodology, templates, courses on project-based work)
  - Management Project on Organisational Transformation (12 ECTS)
  - Or as an alternative: Company Internship (12 ECTS)
- Case studies (digital description, data, materials)
- Scientific elements:
  - Scientific Seminar, 6 ECTS, elective

## C) Teaching & Learning Activity Plan

Elements of the educational package:

<b>Mandatory (Core) Modules</b>	<b>ECTS</b>	<b>Description</b>
Agile Management in Virtual Project Environments	<b>6</b>	
Managing Digital Change	<b>6</b>	Including the Digital Transformation Maturity Model (DTMM)
<b>Elective (Additional) Modules</b>		
<i>Communication inside and outside of Organisations in the Digital Era</i>	6	
<i>Knowledge Management in Projectized Organisations</i>	6	
<b>Scientific &amp; Practical Elements</b>		
Scientific Seminar (Elective)	<b>6</b>	scientific methods and tools for the analysis of transformation processes and maturity, including e.g., course on Research Methods & Tools, assignment of writing a paper for a student conference

Management Project on Organisational Transformation	12	Students conduct a team project (2-4 students per team) on a consulting case study and present the results
<i>Company Internship (alternative to management project)</i>	12	<i>Student conduct an internship and deliver an internship report</i>

### 3.6 Teaching & Learning Resources

Learning Management System (LMS): moodle

IT tools for project management (e.g., Atlassian Confluence, Jira)

IT tools for collaborative work (Microsoft 365, Teams)

Required digital learning resources:

- Digital case studies, including digital media: to be defined (t.b.d.)
- Online courses, t.b.d.
- Tutorials and reading materials, t.b.d.

### 3.7 Tailoring & Educational Tracks

The educational package will implement 2 Educational Tracks:

- Practical: focus on professionals and consultants => company training programme
- Scientific: focus on Master's students

### 3.8 Assessment Methods

*Planned assessment methods:*

<b>FORM</b>	<b>ECTS</b>	<b>REMARK</b>
Agile Management in Virtual Project Environments	6	Team project + presentation (50%), written/oral exam (20%), and homework (scientific paper) (30%)
Managing Digital Change	6	Team project + presentation (50%) and homework (50%)
<i>Communication inside and outside of Organisations in the Digital Era</i>	6	<i>Team challenge (50%) and online test (50%)</i>
<i>Knowledge Management in Projectized Organisations</i>		Practical demonstration (KM tool) (50%) and written exam (50%)
<i>Scientific Seminar</i>	6	<i>Test (Research Methods &amp; Tools) (30%), Scientific Paper presented at conference (70%)</i>

Management Project on Organisational Transformation	12	Project pitch as team presentation (30%), concept demonstration (30%), written reflection report (40%)
<i>Company Internship</i>	12	<i>feedback of employer (30%), internship report (30%), presentation of work results (40%)</i>

### 3.9 Curricula Integration

Educational programmes can integrate the package as:

- single modules as electives
- complete package as a 30 ECTS minor in Master's programmes
- project assignments

in educational programmes like Master's in Management or Business Administration, Master's in Project Management, Master's in Informatics, Business Informatics, Information Technology

### 3.10 Quality Assurance - Evaluation

Quality assurance - Evaluation

- expert review and release of specification and module by IEB/QMB
- pilot teaching with peer review and evaluation survey (students, teachers)
- via student survey after each teaching of the module
- after curriculum integration: accreditation review

## 4. References

[1] EU: The European Qualifications Framework: supporting learning, work and cross-border mobility, Luxembourg: Publications Office of the European Union, 2018

[2] EU: Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), <https://enqa.eu/index.php/home/esg/>, Brussels, Belgium, 2015

[3] Rajala, S.A.: Beyond 2020: Preparing Engineers for the Future. Proceedings of the IEEE, Vol. 100, pp. 1376-1383, DOI 10.1109/JPROC.2012.2190169, 2012

[4] European Institute of Innovation and Technology (EIT), "Quality for learning" EIT Quality Assurance and Learning Enhancement Model, [https://eit.europa.eu/sites/default/files/eit\\_label\\_handbook.pdf](https://eit.europa.eu/sites/default/files/eit_label_handbook.pdf), 2016

See References of module specifications for content related literature.