

Educational Package Specification:

Competences and the Digital Transformation (CDT)

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

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ProDiT
Projects for the Digital Transformation

1. Summary

The **Educational Package “Competences and the Digital Transformation (CDT)”** delivers the competences needed for the competence development and the competence-based management of project teams in the digital transformation.

Overall Learning Outcome: Participants will learn:

- to define the competences needed for the digital transformation, using the competence model for the digital transformation (CMDT)
- to assess and manage the competence development of individuals and teams
- to build and lead competent teams for digital transformation (DT) projects

Target Group Analysis:

- Students in Master’s programmes need the competences in addition to their degree major, e.g. management, IT, education or HR
- Professionals need the competences as they progress into management positions
- Trainers and consultants need the competences in order to analyse and support the digital transformation, including sustainability audits

Competences & Learning Outcomes: The main competences are:

- Knowledge about the methods, tools and processes for competence management and team development in the digital era, including competence models
- Practical skills in order to train and develop individuals and teams and to staff projects
- Scientific reflection about the issues and concepts behind competence-based approaches for project management and organisational development (learning)
- Ability to develop individuals and teams to new competence levels

Selection of Content: Main topics addressed by the package:

- Competence Management for the Digital Transformation
- Distributed Teams
- Agile Management in Virtual Project Environments
- Managing Digital Change
- Digital Transformation Project for Competence Development in an Organisation
- Scientific Methods and Tools for Competence Management

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 and competence 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 or HR, Master's in Education, Master's in Project Management, Master's in Informatics, Business Informatics, Information Technology

Quality Evaluation:

t.b.d.

Change History & Ownership:

Release V1.0: Initial version of the specification of the edupack "Competences and the Digital Transformation (CDT)", 09.09.2022

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2. Introduction to the educational package

The educational package (edupack) on “Competences and the Digital Transformation (CDT)” delivers the relevant project management and educational/HR competences:

- to define the competences needed for the digital transformation, using the competence model for the digital transformation (CMDT)
- to assess and manage the competence development of individuals and teams
- to build and lead competent teams for digital transformation (DT) projects

The competence is delivered by providing the:

- mandatory module “Competence Management for the Digital Transformation” (6 ECTS)
- mandatory module “Distributed Teams” (6 ECTS)
- elective module (choose 1 out of 3) “Agile Management in Virtual Project Environments” (6 ECTS)
- elective module (choose 1 out of 3) “Managing Digital Change” (6 ECTS)
- elective module (choose 1 out of 3) “Scientific Methods and Tools for Competence Management” (6 ECTS)
- team/individual project assignment “Digital Transformation Project for Competence Development in an Organisation” (12 ECTS)

The edupack addresses topics like:

- What is competence or competency? What is a competence profile and a competence model? How can competence management be digitally supported?
- How can the competence of a team or an individual be assessed? How can the required competences for a project be estimated? How can the Competence Model for the Digital Transformation (CMDT) be used for this?
- How can DT projects be staffed and lead with respect to competences?
- How can the competence of individuals, teams and organisations be developed?
- 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 are (according to EQF [1][2]):

- Knowledge about the methods, tools and processes for competence management and team development in the digital era, including competence models
- Practical skills in order to train and develop individuals and teams and to staff projects
- Scientific reflection about the issues and concepts behind competence-based approaches for project management and organisational development (learning)
- Ability to develop individuals and teams to new competence levels

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
- **Global Competence:** This involves

The **Overarching Learning Outcomes (OLO)** [5] are: t.b.d.

3.2 Target Group Analysis

Relevant target groups are:

- Students in Master's programmes need the competences in addition to their degree major, e.g. management, IT, education or HR
- Professionals need the competences as they progress into management positions
- Trainers and consultants need the competences in order to analyse and support the digital transformation, including sustainability audits

3.3 Competences & Learning Outcomes

This chapter contains a more detailed description of the competences delivered by the educational package.

t.b.d.

3.4 Content

Main topics addressed by the package:

- Competence Management for the Digital Transformation
- Distributed Teams
- Agile Management in Virtual Project Environments
- Managing Digital Change
- Digital Transformation Project for Competence Development in an Organisation

- Scientific Methods and Tools for Competence Management

3.5 Concept and composition of the package

A) Overall concept, curation of content, didactic concept

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

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

The educational package follows the following concept:

- Knowledge about the methods, tools and processes for competence management and competence-based project management for the digital transformation 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 development project for a sustainable digital innovation, 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 build competent teams and to develop the competence of individuals, teams and organisations is trained by preparing students for such roles, put them into the roles in projects, and by letting them reflect on the role afterwards.

- The scientific competences for analysing, reflecting and researching on the competences and competence management for the digital transformation 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.

B) Educational Elements

The package is composed out of:

- eLearning Modules (including online courses)
 - Competence Management for the Digital Transformation (6 ECTS), mandatory
 - Distributed Teams (6 ECTS), mandatory
 - Agile Management in Virtual Project Environments (6 ECTS), elective
 - Managing Digital Change (6 ECTS), elective
- Projects (including methodology, templates, courses on project-based work)
 - Digital Transformation Project for Competence Development in an Organisation (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

Example (of a project management educational package):

Mandatory (Core) Modules	ECTS	Description
Competence Management for the Digital Transformation	6	Including the Competence Model for the Digital Transformation (CMDT)
Distributed Teams	6	
Elective (Additional) Modules		
<i>Agile Management in Virtual Project Environments</i>	6	
<i>Managing Digital Change</i>	6	
Scientific & Practical Elements		
Scientific Seminar (Elective)	6	scientific methods and tools for the competence management for the

		digital transformation, including e.g. course on Research Methods & Tools, assignment of writing a paper for a student conference
Digital Transformation Project for Competence Development in an Organisation	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:

- Case studies, 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:

FORM	ECTS	REMARK
Competence Management for the Digital Transformation	6	Team project + presentation (50%) and homework (50%)
Distributed Teams	6	Team project + presentation (50%) and oral exam (50%)
<i>Agile Management in Virtual Project Environments</i>	6	<i>Team project + presentation (50%) and oral exam (50%)</i>
<i>Managing Digital Change</i>	6	<i>Team challenge (50%) and online test (50%)</i>

<i>Scientific Seminar</i>	6	<i>Test (Research Methods & Tools) (30%), Scientific Paper presented at conference (70%)</i>
Digital Transformation Project for Competence Development in an Organisation	12	Project pitch as team presentation (30%), (training) concept presentation (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
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in educational programmes like Master's in Management or Business Administration or HR, Master's in Education, Master's in Project Management, Master's in Informatics, Business Informatics, Information Technology

3.10 Quality Assurance - Evaluation

Quality Assurance – Evaluation

T.b.d.

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, 2016