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Module Specification:

Project Management Tool Box (PMTB)

Within the Erasmus+ KA2 Capacity Building Project (CBHE)

CompIIT – Competences for International Innovation Projects

Project 101082806

Authors: Carsten Wolff (FH Do), Bassam Hussein (NTNU)

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1 Summary

Overall Learning Outcome: The “Project Management Tool Box” is an online library for project management and project work which intends to give teachers and learners the required reading materials, tools and templates for managing their educational and research projects successfully. In that sense, it is mainly intended for self-study. It is not a course in the traditional sense and has no specific learning outcomes for that reason. It is supplementary material for project-based, problem-based and challenge-based learning.

Target Group Analysis: The module addresses **students, teachers and practitioners** on all levels if they intend to plan and conduct projects.

Competences & Learning Outcomes:

- Knowledge on project management methods, tools and processes for both traditional and agile projects in education and research
- Knowledge on IT tools for projects, project management and collaboration
- Knowledge on team forming, team work and (online) team collaboration
- Knowledge on related topics like Risk Management, Stakeholder Management, Requirements Management, Change Management, Configuration Management, Release Management, Test Management

Selection of Content:

- Project Types and Frameworks
- Traditional Project Management (including Risk Management)
- Agile Project Management
- Teamwork & Collaboration
- Work Spaces and Tools
- Sustainable Project Management (including Stakeholder Management)
- Special Topics (Requirements Management, Change Management, Configuration Management, Release Management, Test Management)

Activities and Teaching/Learning Methods:

- Self-learning: Online Courses, Videos, Literature for the Knowledge Transfer (mainly online)

Teaching Materials/Literature/Media/Technical Requirements/Lab Equipment:

- Documentation, eBooks, Tutorials, Videos
- IT tools (web-based)

Tailoring & Educational Tracks (Practical, Entrepreneurial, Scientific):

- Tailoring of project specific “Project Management Tools Boxes”

Competence Assessment:

- Only self-assessment within the online courses

Curricula Integration: The “Project Management Tool Box” can be used within project- or project management-related modules or for any kind of project-based assignment (with a certain project complexity which requires at least some project management).

Quality Evaluation: Quality review by experts, evaluation of teaching activities

Change History & Ownership:

Release V2.0: Release Version (15.3.2024), Carsten Wolff (FH Do), Bassam Hussein (NTNU)

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2. Introduction to the module

Using projects as a didactic element and especially doing larger, cross-border projects like the innovation projects is supported by a portfolio of materials, similar to the project management handbooks of enterprises. They form a library of guidelines, checklists, forms and templates which support a high quality and professional project management. One part of the Virtual Project Campus will be such an online library in the form of the “Project Management Tool Box” which will be implemented as an own eLearning module in the LMS. Apart from the guidelines, templates, forms and checklists, the Project Management Tool Box will contain tutorials (for specific project management methodology, e.g. Scrum, Kanban, but also for IT tools), eBooks, online courses and videos, mainly existing material or OER.

Therefore, the “Project Management Tool Box” is not a typical eLearning module but more like an online library, providing reading materials, tools and templates. Nevertheless, it is structured according to the phases and topics of the respective project management methodology, giving project managers, project planners, and project teams guidance through the project. Teachers can tailor to tool box to a set of tools specifically suited for the type and size of project they want to do with the students.

The module is structured as follows:

1) Project Types and Frameworks
2) Traditional Project Management (including Risk Management)
3) Agile Project Management
4) Teamwork & Collaboration
5) Work Spaces and Tools
6) Sustainable Project Management (including Stakeholder Management)
7) Special Topics (Requirements Management, Change Management, Configuration Management, Release Management, Test Management)

3. Module Description

3.1 Overall Learning Outcomes

As described in the introduction, the module is an online library which is mainly intended for self-learning. The learning outcomes depend on the tailoring of the library to the specific project which is to be supported.

- **Knowledge:** Upon completion of this module, students will be able to:
  - Knowledge on project management methods, tools and processes for both traditional and agile projects in education and research
  - Knowledge on IT tools for projects, project management and collaboration
  - Knowledge on team forming, team work and (online) team collaboration
  - Knowledge on related topics like Risk Management, Stakeholder Management, Requirements Management, Change Management, Configuration Management, Release Management, Test Management
- **Skills:** Upon completion of this module, students will be able to:
  - Apply IT-tools for managing and conducting projects.
  - Apply project management methodology.

Learning Outcomes/Competences need to consider several competence domains [4]:

- **Technical Competence**: agile and traditional project management methods, Scrum, Kanban, digital literacy in online collaboration tools
- **Professional Competence**: management competences, IT skills
- **Global Competence**: n.a.

3.2 Target Group Analysis

The module addresses students, teachers and practitioners on all levels if they intend to plan and conduct projects.

The “Project Management Tool Box” is an additional offer for conducting projects, especially for educational and research projects. The intention is that students, teachers and practitioners are using the documentation, tools and templates to prepare and conduct such projects in a more professional and realistic way (similar to projects in business and industry). The usage of the materials from the “Project Management Tool Box” inherently leads to project and project management competences. Therefore, the target group are user who want to achieve better project outcomes and who are interested in project-related learning beyond the immediate projects outcomes.

3.3 Competences & Learning Outcomes

See 3.1

3.4 Content

The “Project Management Tool Box” is not a typical eLearning module but more like an online library, providing reading materials, tools and templates. Nevertheless, it is structured according to the phases and topics of the respective project management methodology, giving project managers, project planners, and project teams guidance through the project. Teachers can tailor to tool box to a set of tools specifically suited for the type and size of project they want to do with the students.

The module is structured as follows:

- Project Types and Frameworks
    - Definitions and descriptions of projects types, especially innovations projects, cross-border projects and startup projects
    - Project (management) taxonomies for assessing the project type and selecting the right project management methodology
    - Project phase models and generic project frameworks (e.g. canvas models)
- Traditional Project Management (including Risk Management)
    - eBooks about traditional project management
    - project documentation templates, e.g. project charter, milestone definitions and checklists, work-breakdown structure (WBS), work package description, RASCI matrix, project reporting and controlling etc.
    - project planning tools like network diagrams, gantt charts
    - templates for risk assessment (e.g. FMEA) and risk mitigation plans
    - videos and tutorials, practical exercises
    - project management IT tools, e.g. MS Project, OpenProject with tutorials
- Agile Project Management
    - eBooks and websites
    - documentation and tutorials, especially on Scrum, Kanban, Scrumban
    - introductory materials on frameworks like SAFe, LESS
    - documentation and tutorials on SW development related methods, e.g. DevOps, CI/CD, user-centred design
    - videos and tutorials, practical exercises
    - project management IT tools, e.g. Atlassian Confluence, Jira and Trello, Redmine
- Teamwork & Collaboration
    - Resource planning, mapping and scheduling tools and forms, including documentation and eBooks
    - Team forming, team work and team management
    - (team) personality tests, e.g. Belbin, 16-personalities
    - Competence profiles and respective catalogues
    - videos and tutorials, practical exercises
    - collaboration IT tools, e.g. MS Teams, zoom, BigBlueButton

- Work Spaces and Tools
    - eBooks, documentation, tutorials and online courses, videos on the concepts of joint online work-spaces and the respective tools
    - videos and tutorials, practical exercises
    - online workspace IT tools, e.g. nextcloud, MS Sharepoints, google docs
- Sustainable Project Management (including Stakeholder Management)
    - eBooks, documentation, tutorials and online courses, videos on the concepts of sustainable project management
    - Sustainability assessment and planning tools, e.g. sustainable business model canvas, digital sustainability canvas (DSC), templates and documentation
    - eBooks, documentation, tutorials and online courses on results-based management (RBM) and other relevant controlling tools
- Special Topics (Requirements Management, Change Management, Configuration Management, Release Management, Test Management)
    - eBooks documentation, tutorials and online courses, videos on the concepts
    - project documentation templates, project planning tools
    - videos and tutorials, practical exercises
    - project management IT tools

3.5 Teaching & Learning Activity Plan

A) Teaching/learning methods per competence:

- Knowledge: online courses, videos, lectures, literature: books and scientific papers, recent articles from scientific journals (mainly online), tool trainings & tutorials

B) Didactic concept:

The didactic concept is based on 3 main steps:

- Tailoring of the project methodology and project management approach to the specific type of project: compilation of a project specific digital library (project management tool box)
- Planning the project and defining the required knowledge, skills and competences along the project journey.
- Definition of a training plan for the project team (possibly role dependent) with self-study material and (possibly) self-assessments for control of the learning trajectory

The project specific digital library (project management tool box) will contain:

- Online courses, videos, eBooks, materials for further reading
- Tool trainings and tutorials for practical skills

The training plan will be a guideline for the sequence and pace of going through the digital library.

C) Learning Activity Plan:

Activity 1: Introduction or briefing session *for participants of the project => introduction to the project type and the tailored, project specific "project management tool box"*

Can be classroom lectures, online courses, videos or tutorials, and reading materials. The introduction or briefing session is conducted before the project start.

Activity 2: Theory courses *on project management, e.g. the module "Scrum & Kanban" or the module "Agile Management in Virtual Project Environments" which can be taught by using materials from the "Project Management Tool Box".*

Activity 3: Self-learning on project management, individually or in teams *by using materials from the "Project Management Tool Box". In such settings, self-assessment or exercises can be used to monitor the learning process.*

Activity 4: Project team coaching, *e.g. by tutors, Scrum Masters etc., who are using the materials for instructing and training of the project team members.*

Activity 5: Project design and project planning, *e.g. by the teacher or by the project manager, who is using the tools and templates for the actual project planning and management activities.*

3.6 Teaching & Learning Resources

- Learning Management System, e.g. moodle
- Collaboration and video conferencing platform, e.g. MS Teams
- IT tools for agile projects management, e.g., Atlassian Confluence, Jira, MS Planner
- System for online surveys, checklists and usability tests, e.g. google forms

3.7 Tailoring & Educational Tracks

Tailoring of project specific "Project Management Tools Boxes" (see 3.5 B)

3.8 Assessment Methods

No specific assessment methods apart from self-assessment.

The materials from the "Project Management Tool Box" can be used for teaching activities and tool trainings. In that sense, they can serve as a basis for assessment activities within these teaching activities and trainings.

3.9 Curricula Integration

Integrate in which study programs?

- Any type of educational or research projects which require professional project management

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. Syllabus/Module Handbook

<table>
<tr><td colspan="7">Agile Management in Virtual Project Environments (AMVPE)</td></tr>
<tr><td colspan="2">Module Owner
xxx</td><td>Workload
180 h</td><td>Credits
n.a.</td><td>Semester
n.a.</td><td>Frequency
any semester</td><td>Duration
n.a.</td></tr>
<tr><td>1</td><td colspan="2">Course Title
Project Management Tool Box</td><td colspan="2">Contact hours
none</td><td>Self-Study
Depending on project type: 6-60 h</td><td>Planned Group Size
n.a.</td></tr>
<tr><td>2</td><td colspan="6">Course Description

The “Project Management Tool Box” is not a typical eLearning module but more like an online library, providing reading materials, tools and templates. Nevertheless, it is structured according to the phases and topics of the respective project management methodology, giving project managers, project planners, and project teams guidance through the project. Teachers can tailor to tool box to a set of tools specifically suited for the type and size of project they want to do with the students.</td></tr>
<tr><td>3</td><td colspan="6">Course Structure

The module is structured as follows:

1) Project Types and Frameworks
a) Definitions and descriptions of projects types, especially innovations projects, cross-border projects and startup projects
b) Project (management) taxonomies for assessing the project type and selecting the right project management methodology
c) Project phase models and generic project frameworks (e.g. canvas models)

2) Traditional Project Management (including Risk Management)
a) eBooks about traditional project management
b) project documentation templates, e.g. project charter, milestone definitions and checklists, work-breakdown structure (WBS), work package description, RASCI matrix, project reporting and controlling etc.
c) project planning tools like network diagrams, gantt charts
d) templates for risk assessment (e.g. FMEA) and risk mitigation plans
e) videos and tutorials, practical exercises
f) project management IT tools, e.g. MS Project, OpenProject with tutorials

3) Agile Project Management
a) eBooks and websites
b) documentation and tutorials, especially on Scrum, Kanban, Scrumban
c) introductory materials on frameworks like SAFe, LESS
d) documentation and tutorials on SW development related methods, e.g. DevOps, CI/CD, user-centred design
e) videos and tutorials, practical exercises
f) project management IT tools, e.g. Atlassian Confluence, Jira and Trello, Redmine</td></tr>
</table>

	4) Teamwork & Collaboration a) Resource planning, mapping and scheduling tools and forms, including documentation and eBooks b) Team forming, team work and team management c) (team) personality tests, e.g. Belbin, 16-personalities d) Competence profiles and respective catalogues e) videos and tutorials, practical exercises f) collaboration IT tools, e.g. MS Teams, zoom, BigBlueButton 5) Work Spaces and Tools a) eBooks, documentation, tutorials and online courses, videos on the concepts of joint online work-spaces and the respective tools b) videos and tutorials, practical exercises c) online workspace IT tools, e.g. nextcloud, MS Sharepoints, google docs 6) Sustainable Project Management (including Stakeholder Management) a) eBooks, documentation, tutorials and online courses, videos on the concepts of sustainable project management b) Sustainability assessment and planning tools, e.g. sustainable business model canvas, digital sustainability canvas (DSC), templates and documentation c) eBooks, documentation, tutorials and online courses on results-based management (RBM) and other relevant controlling tools 7) Special Topics (Requirements Management, Change Management, Configuration Management, Release Management, Test Management) a) eBooks documentation, tutorials and online courses, videos on the concepts b) project documentation templates, project planning tools c) videos and tutorials, practical exercises d) project management IT tools
4	**Application Focus** The didactic concept is based on 3 main steps: • Tailoring of the project methodology and project management approach to the specific type of project: compilation of a project specific digital library (project management tool box) • Planning the project and defining the required knowledge, skills and competences along the project journey. • Definition of a training plan for the project team (possibly role dependent) with self-study material and (possibly) self-assessments for control of the learning trajectory The project specific digital library (project management tool box) will contain: • Online courses, videos, eBooks, materials for further reading • Tool trainings and tutorials for practical skills • The training plan will be a guideline for the sequence and pace of going through the digital library.
5	**Scientific Focus** n.a.
6	**Parameters**

	• ECTS: n.a. • Hours of study in total: 6-60 – Self-Study hours: 6-60 • Course characteristics: complementary learning materials • Course frequency: for each project • Maximal capacity: n.a. • Course admittance prerequisites: prior knowledge of project management and agile principles and practices, digital literacy • Skills trained in this course: theoretical, practical • Assessment of the course: only self-assessment • Teaching staff: project coordinators (teachers) and project management experts
7	**Learning outcomes** Knowledge and understanding: The students • Knowledge on project management methods, tools and processes for both traditional and agile projects in education and research • Knowledge on IT tools for projects, project management and collaboration • Knowledge on team forming, team work and (online) team collaboration • Knowledge on related topics like Risk Management, Stakeholder Management, Requirements Management, Change Management, Configuration Management, Release Management, Test Management Application and generation of knowledge: The students are able to • Apply IT-tools for managing and conducting projects. • Apply project management methodology.
8	**Teaching and training methods** • Only self-study • Materials can be used for teaching in other modules/courses
9	**Curricula Integration** Complementary materials for projects within the curriculum
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