INNOVATION PROJECT MANGEMENT COURSE

Teacher´s Guide

CONTENT

1   INTRODUCTION

This document aims to guide teachers and trainers on how to use the Project management of innovations (InnoPro) course. The course has been developed in two ways.

-      Kit of educational materials to be used separately or as a course (pdf materials, videos, presentations, case studies, …)

-      Moodle Course (e-learning, open access)

The course may be used at universities as a subject of the university curricula or as workshops, or it may also be used as an open course for employees from technology companies, governmental agencies or the general public.

The approach of the course is based on a project cycle methodology applied to the preparation and management of innovation projects. It also includes an introduction to the essence of innovation management.

1.1   COURSE MOTIVATION

Employers have increasingly required project management skills and competencies in almost all sectors of the economy. According to the Project Management Institute (PMI), demand for project managers is anticipated to be faster than any other occupation. However, the education of future project managers does not entirely meet the requirements of the labour market and scientific research environment. Innovation Project Management's (InnoPro's) primary motivation was to enhance the target groups' professional competence (university students, young researchers, adults-employees) in project and innovation management. The course places emphasis on the interconnection of knowledge of the fields of study of innovation and project management by defining a set of tools, templates and concepts to support the project management work. Students will also improve several management skills (especially critical thinking, decision-making, planning, and oral and written communication) and their preparedness for a future career both at universities/research centres and in the industry/companies. This will increase the employability of the students in the labour market, attract young people to innovations and support the utilisation of R&D results in economies simultaneously.

1.2   COURSE DESCRIPTION

The InnoPro course provides an overall understanding of innovation project management from a broader perspective. The course gathers the key elements of innovation, process and innovation management systems developed with the AIDIC (Assessment-Initiation-Design-Implementation-Closure) model, representing a unique approach in a general project cycle methodology.

The AIDIC model can be read from beginning to end to learn about the methodology, or it can be used as a reference to help you practise a project cycle. AIDIC model concept is the light, easy-to-implement methodology project teams can tailor to their specific needs.

AIDIC model concept incorporates elements from widely accepted project management best practices, captured in standards and methodologies. Its development has also been influenced by operational experience on various projects within the European Union (EU) Institutions and external bodies.

AIDIC model includes the following project cycle stages:

1. **A**ssessment = Define the Problem.
2. **I**nitiation = Develop Solution Options.
3. **D**esign = Plan the Project.
4. **I**mplementation = Execute the Plan.
5. **C**losure = Monitor, Control Progress & Close the Project.

1.3   COURSE FORMATS

The course has been developed and can be used in two formats:

COURSE	WORKSHOP
▪ 15 weeks x 90 minutes *(for one semester at universities)*	▪ 3 days x 7.5 hours
▪ 90 minutes = 1.5 hours per one lesson	▪ 60 minutes per one lesson

The time frame of the course/workshop may significantly differ according to the lesson's structure, amount of materials and tools presented, target group etc.

1.4   BREAKDOWN AND STRUCTURE

STAGE	GENERAL DESCRIPTION	SUB-STAGE	STEPS	PROJECT OUTPUTS	TOOLS and TEMPLATES	LEARNING HOURS	
						THEORY	PRACTICE
COURSE INTRODUCTION	● Project management and innovation	● Introduction to innovation management	● Innovation: concept and process ● Innovation management systems	● SWOT analysis ● Innovation management system definition	Tools: ● ISO 56002: innovation management system-guidance (UNE 166002 in Spain) ● Process flow diagrams	1 x 90 min.	1 x 45 min.
1. ASSESSMENT	● The organisation defines needs and commissions the project to meet it	● Assessment of the problem, need or opportunity to start a project ● Innovation opportunities analysis	● Formalisation of problem, need or opportunity to start a project ● Innovation prospective	● Project Initiation Request (PIR) ● Innovation project report	Tools: ● PIR Form *Templates:* ● Mindtools.com	1x 45 min.	1 x 90 min.
2. INITIATION	● The tasks required to authorise, fund and define the project, generally on the organisational level (above the project)	● Project identification and definition ● Initial project budget allocation ● Primary project stakeholder's identification ● Fundraising	● Project Purpose ● Project Goals/Questions ● Project Scope ● Project Deliverables ● Project Stakeholders ● Grant Resources ● Instruments for financing innovations ● Public procurements	● Project Initiation Plan ● Project Charter ● Project Scope Statement ● Stakeholder Analysis ● Grant Resources Analysis	Tools: ● Mind Map ● Logical Framework Matrix (LFM) ● Project Charter Template ● Grant Resources Analysis *Templates:* ● Coggle.it ● Carleton.ca ● Easyproject.com ● Smarthseet.com ● Vertex42.com ● Logframer.eu	1 x 90 min.	2 x 90 min.
3. DESIGN	● The project management team define how the project will be carried out, who will do the work, how long it will take, and so forth ● The planning phase defines the project in sufficient detail that all stakeholders' expectations are understood	● Creating of workflow project ● Estimating project time and budget ● Gathering resources ● Risk assessment ● Project communication ● Monitoring & Controlling	● Scope of Work ● Project Milestones ● Project Scheduling ● Project Budgeting ● Resource Plan ● Identification and management of project risks ● Communication requirements and rules ● Monitoring of project performance and progress, managing changes, addressing risks	● Statement of Work ● Gantt Chart ● Project Plan (Success Factors, Deliverables, Schedule, Budget, Human resource, Quality management) ● Risk management plan ● Procurement management plan ● Project status report and project change	Tools: ● Work Breakdown Structure ● Organisation Breakdown Structure ● Responsibility Assignment Matrix ● Gantt Chart ● Cost Breakdown Structure ● Resource Breakdown Structure ● Risk Assessment Tool ● Communication Matrix *Templates:* ● Easyproject.com	2 x 90 min.	2 x 90 min.

				documentation	● Smarthseet.com ● Vertex42.com ● MS2014+ (for the Czech Republic)	
4. **IMPLEMENTATION**	● The project work is completed and the final product or service is achieved while secondary stakeholder requirements are satisfied ● Concurrent to the project work the project management team monitors and controls all aspects of the project – schedule, cost, stakeholder's requirements, etc. ● If problems are encountered, changes to the project plan are made	● Briefing team members ● Monitoring quality of work ● Validity and up-to-date innovations ● Managing budget and earned value ● Monitoring & Controlling	● Kick-off meeting ● Project status ● Change request ● Prospective and technology watching ● Project outputs handovers ● Acceptance of project implementation ● Monitoring of project performance and progress, managing changes, addressing risks	● Kick-off meeting minutes (agenda) ● Project status report ● Status updates and project change documentation ● Stakeholder communication ● Earned value analysis (EVA) ● Project checklist ● Technology watching report and business plan	*Tools:* ● Kick-off Meeting Template ● EVA Template ● Project Checklist Template ● Change Management Document Template ● Progress Project Report Template ● Business plan template *Templates:* ● Easyproject.com ● Smarthseet.com ● Vertex42.com ● MS2014+ (for the Czech Republic)	1 x 90 min.	2 x 90 min.
5. **CLOSURE**	● The project has completed its product or service, and the necessary documentation and administrative work must be done to close the project ● Exploitation of results	● Project reporting ● Analysing project and team results ● Project documentation closure ● Project evaluation ● Intellectual and industrial property aspects ● Monitoring & Controlling	● Formal project closure ● Public Procurement procedures evaluation ● Instruments of industrial and intellectual property protection ● Final beneficiary and subsidy provider acceptance ● Project archiving ● Lessons learned ● Monitoring of sustainability of project outputs, managing changes, addressing risks	● Project checklist ● Patents, utility models and/or industrial design ● Project final report ● Accounting report ● Project sustainability report	*Tools:* ● Final Project Report Template *Templates:* ● Easyproject.com ● Smarthseet.com ● Vertex42.com ● MS2014+ (for the Czech Republic)	1 x 90 min.	1 x 90 min.

2   METHODS AND SKILLS TO BE DEVELOPED BY INNOPRO COURSE

The links between learning methods and skills to be developed based on the IPMA Competence Baseline[1]
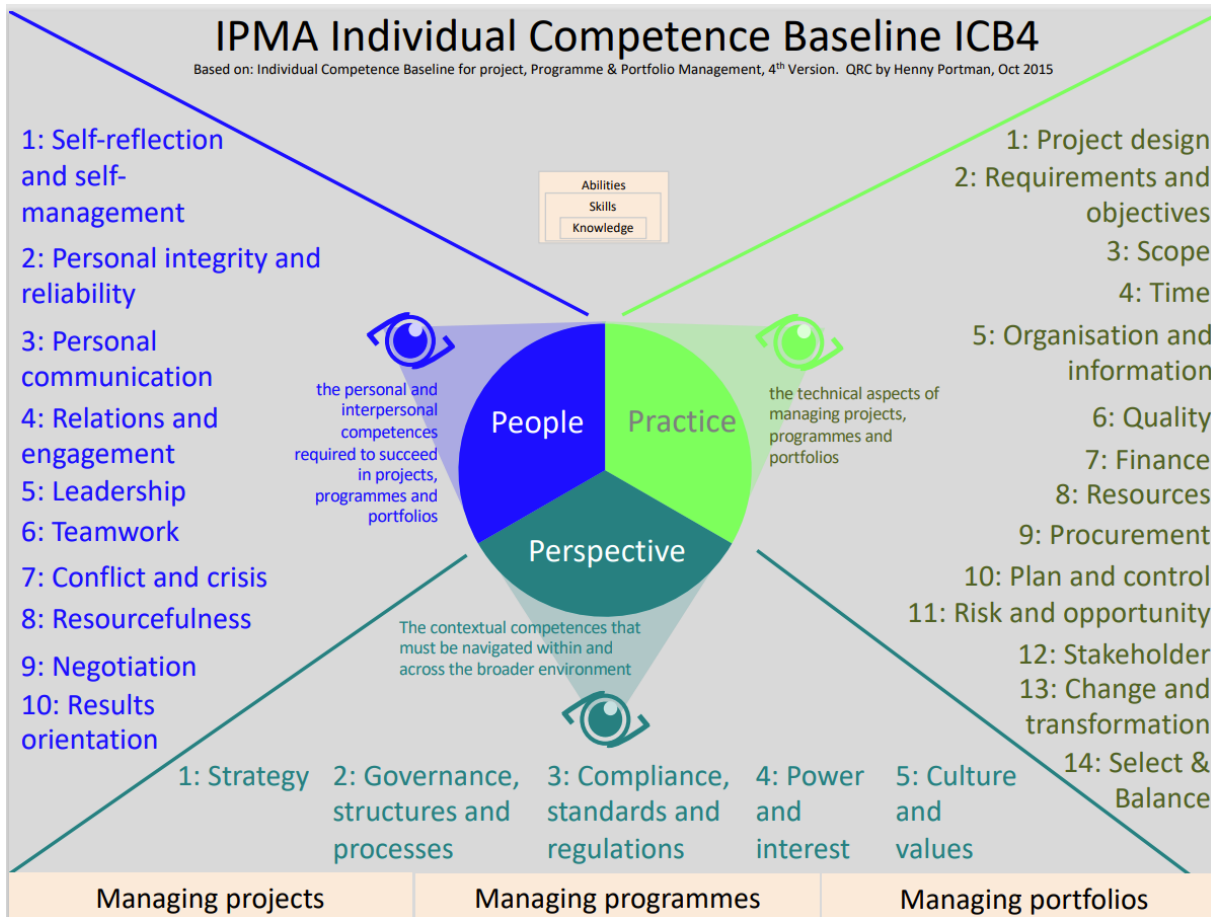
Skills &competences	Methods
Teamwork Personal communication Relations and engagement Creativity Resourcefulness	Discussions Group works Case studies Role-playing
Leadership	Role-playing Group works
Negotiations	Role-playing Forum
Self-reflection Self-management	Review questions Self-assessment
Result orientation Teamwork	Practical tasks

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[1] https://hennyportman.files.wordpress.com/2015/10/icb4-qrc-200329-v1.0-2.pdf

Specific teaching methods and approaches can develop personal and interpersonal competences (People).

Technical aspects (Practice) of managing projects can be taught by the theoretical course and practical and complementary materials.

However, the **contextual competencies (Perspective)** must be navigated within and across the broader environment. They are gradually developed during a lifetime.

On-line teaching offers limited possibilities for soft skills development, for example:

- Group work (students can be split into groups).
- Tools: Kahoot, Mentimeter, Prezi, Padlet etc.
- Forum – peer-to-peer activity.
- Chat.

2.1 HOW TO WORK WITH THE COURSE AND EDUCATIONAL MATERIALS

Instruction in the absence of application is incomplete because it occurs in an artificial learning environment. Often, there is no direct connection between the material and the learner's experience so learning can be complicated.

We "use" the information we obtain to construct meaning, and we use previously learned material and experiences to build a framework for effectively incorporating new information.

The InnoPro course is based on the following learning methods:

- Helping students answer their questions.
- Demonstrating the importance of the subject.
- Make it clear how the topic fits in the course.
- Stimulated intellectual effort.
- Introduced stimulating ideas.
- Inspired students to set challenging goals.

These methods primarily suggest the importance of stimulating interest in the topic, demonstrating its importance, inspiring students to set high goals, and helping students answer their questions. In "learning to apply course material," it is important to involve students in the learning process actively and to help them see both the relevance and importance of the information involved. These six items all pertain to assisting students in building a foundation of specific course knowledge and taking responsibility for their learning.

"Learning to apply course material" is not strongly related to the amount of work and difficulty of the course, nor participating in teams and discussion groups. While these are very important aspects of the learning process, the mere presence of complex material and working in groups does not necessarily relate to the purpose of the course. The application must involve an individual effort, as follows:

- Proceed from theory to practice.
- Respect the logical order of the topics.

- Explain the theory on practical examples.
- Follow examples of good practice.
- Work with techniques and templates based on examples of real projects.
- Trying out more websites, techniques and templates – a possible combination of multiple resources –must be helpful for users.

3   ASSESSMENT

Several classroom assessment techniques can be used to document the extent to which students learn to apply course material. For example, "Application Cards" may be used whereby students write down one unique real-world application of the material covered. This is a quick and easy method to determine whether the student understands the material and how it can be applied. This technique may be broadened to include aspects of problem-solving and critical thinking.

Suppose the course aims to teach students to apply course material for improved thinking, problem-solving, and decision making. In that case, giving the students multiple opportunities to practice that behaviour is imperative. Additionally, if these forms of thinking and problem solving are important aspects of the course, they should be demanded of the students as part of the course. Students quickly determine that issues of importance to the instructors are related to the grading process and that attention to these issues is important for better learning and better grades.

USING SELF-ASSESSMENT in the CLASSROOM – Rationale and Suggested Techniques, as follows:

- Student Progress Cards.
- Rating Scales, Check lists and Questionnaires.
- Learner Diaries and Dialog Journals.
- Video.