Course programme – IFI7003 Project Management in Software Engineering

Course code IFI7003	**Project Management in Software Engineering**		
Volume 6 ECTS	Contact hours: 26	Semester: Autumn	Examination
Learning objective:	To allow the student a possibility to acquire knowledge and skills in project planning and management.		
Short description:	Introduction to the course. The basic concepts, process models and structures of projects and project management. Basic principles and methods for initiation, planning and execution of projects. Basic principles, models and methods of software project management. Specifics of software projects. Software process management. Some other issues related to (software) project management. Independent work: Each student 1) performs three analyses based on the lecture materials and solving home assignment exercises (estimated amount of work – 47 hours); 2) prepares a project plan, executes the project and presents them to the fellow students (69 hours); 3) composes a review of a project plan of a fellow student (6 hours); 4) assessment of three project plans of fellow students (6 hours).		
Learning outcomes:	A student has: - knowledge about the basic structures, models and principles of general project management and of software projects in particular; - skills for development of a (software) project plan; - ability to run small projects; - ability to assess the (software) project plans.		
Assessment methods:	Examination. The grade is formed from three components: 1) project plan and the project report (analysis document) – 50%; 2) presentation (written and oral) of the project plan and analytical report – 25%; 3) review and assessment of project plans of fellow students – 25%. It is recommended that projects are planned and conducted in groups. Project plans cannot be form-based. A guide is available discussing mistakes and deficiencies most often appeared in works of previous years. Each assessment should contain (exactly!) three major strengths and three major weaknesses of the assessed work.		
Lecturer:	Peeter Normak		
Title in Estonian	Projektijuhtimine tarkvaraarenduses		
Prerequisite course	None		

Compulsory literature:	Normak, P. (2014). General Project Management. Lecture Notes. Normak, P. (2014). Software Project Management. Lecture Notes. Lecture Notes and other learning materials and documents can be found at www.tlu.ee/~pnormak/PM2015.
Replacement literature:	A Guide to the Project Management Body of Knowledge (PMBOK Guide; 2008). Project Management Institute. Highsmith, J. (2010). Agile project management: creating innovative products. Addison-Wesley. Managing Successful Projects with PRINCE2; 2005 edition. Office of Government Commerce. TSO, London. ISBN 0113309465. Software cost estimation with COCOMO II. Boehm, Barry. (2000). Information Technology Project Management. Schwalbe, K. (2002). Software project management: a unified framework. Royce, Walker. (1998). Kerzner, H. (2001). Strategic planning for project management using a project management maturity model. PS! Replacement literature does not contain examples discussed in classes.
Subscription to the course and examination	Subscription is free. Examination consists in three parts with the following deadlines: 1) Oral presentations of examination works are taking place on 10th of December; presentation should be made in MS Powerpoint or OO Impress. 2) Examination works should be sent to the given address during one week after presentation. 3) Review and assessments should be sent to the given address before 31.12.
Requirements of independent work	1) Performing home assignments given at the End of each class; discussion of home assignments takes place at the beginning of next class; 2) Timely execution of all assignments necessary for passing the course (described in previous section).
Assessment criteria	1. criterion (examination work) A – examination work excellent in most of the criteria and very good in others: existence of all necessary components/aspects, logical and thorough approach, language use, topicality/importance of the problem. B – examination work has a few problems, the subject of the project is topical. C – examination work has a few deficiencies, the subject of the project has a local importance. D – examination work has some major deficiencies. E – examination work has some major deficiencies and topic is not significant.

	2. criterion (presentation of examination work) A – the presentation (topicality, originality, realistic, consistency, structuring, clarity, interesting, discussion with the listeners, added value to the listeners) is excellent. B – the presentation is very good. C – the presentation is good. D – the presentation is satisfactory. E – the presentation is weak. 3. criterion (review and assessments) A – review and assessments are completely adequate and thorough. B – review and assessments are adequate and thorough. C - review and assessments have some gaps (some aspects are not discussed or have inadequate treatment). D - review and assessments have some deficiencies (some aspects are not discussed or have inadequate/wrong treatment). E - review and assessments have significant deficiencies (several aspects are not discussed or have inadequate/wrong treatment).
Information about the content of the course	The classes take place in every second Wednesday at 12:15-15:30 in A-440. 17.09: **Introduction** (organization of the course and assessment). **Basic concepts and models**. The concept of a project, examples. Life cycle of a project and of a product. The concept of project management (PM). The competency areas of PM (according *PMBOK Guide*), process groups, activities and artifacts. Competency framework of project managers PMCD FW. PM maturity models *PMMM* and *OPM3.* PM in European e-Competence Framework *e-CF*. **Initiation of a project**. Prerequisites for initiating a project. The major risks related to the projects. Determination of the objective of a project and necessary resources. The main financing schemes of projects, and useful sources of information. Composition of an initial plan (charter) of a project. **Forming project teams**. 18.09: **Seminar**. Presentations of project teams: o Objective of the examination work (project) o Needs analysis Discussion of home assignment. **Project planning**. Feasibility study. Project planning time-table, determination of sub-goals and activities, the structure of a project plan, time-table. 15.10: Discussion of home assignment. **Project planning (cont.)**. Project administration, quality assurance. Application of expected results, budget, summary of a project plan. Project framework matrix. Composition of recommendations and reviews. PR-activities. **Launching a project**: management plan, scope management,

	information management, determination of duties and rights. **Running a project:** reporting, quality control, resources management, staff development. 29.10: **Seminar**: Project management software. **Running a project:** role of leadership, creating of a necessary environment, devotion of team members, creativity stimulation, teamwork; conflict management. **Completion of a project**. 12.11: Discussion of the home assignment. **Related questions** (portfolio management, certification of project managers, standards, leading institutions in *PM* theory and practice etc). **Basic principles of software projects**: specifics of software projects, critical success factors, phases of software process, personnel and change management, cooperation with upper management, requirements development, quality assurance. Software design, software delivery, development cost models, management principles. 26.11: **Models and methodologies**: general overview, waterfall model, two-phase model, multiple phase model, *RUP*, *XP*, capability maturity model for software *CMM-SW*, *NASA* software process improvement model. **Related questions**: Software process assessment methodology *SPICE*. *COCOMO* cost model. Positive experience in software development. Principles of software development. Standards. Leading institutions in software development theory. 10.12: **Examination**: presentations and discussion of examination works.

Academic unit:	School of Digital Technologies
Composed by:	Peeter Normak
Date:	21.08.2015

Course pregramme registered

Date	22.08.2015
Academic coordinator:	Merilin Tohver