

Title: Problems of innovative IT projects management

Lecturer: Ass. prof. N.R.Bukharaev, CSc. in Math.

Term:

Lectures +Labs : 30+15 academic hours

ECTS credits:

FEL www:

Annotation:

The current stage of software engineering evolution is characterized by intensive search for unconventional paradigm of "collective intellectual labor", adequate to the growing complexity of software systems development. Among the technologies which made a significant contribution to its formation are Agile, Scrum, XP (eXtreme Programming), Lean and other modern technologies of team development. Currently we can observe an obvious trend to their synthesis and unification into a single discipline under the name of agile project management. Compared to traditional project management the main priorities here are set to bringing into the process of development substantially greater degree of interaction, creativity, innovation and quick response to changes in order to improve the quality of the final product.

The course provides theoretical and practical introduction to agile project management. Major attention is paid to understanding problems and main principles of solutions by practical involvement of students into a team software development.

Prerequisites:

Students should have confident knowledge of the theoretical foundations and practical experience of an individual work throughout all stages of the software development cycle. It is desirable to have experience in a team software development enough to understand problems of inner and outer interaction arising during process of development.

Course Objectives:

After the study students will be able to

- explain major problems of team project management and principles of their solutions;
- clarify the nature of different management approaches of successful IT-projects implementation;
- apply this knowledge to practical decision-making.

Syllabus:

1. The basic notions of project management. Selecting an approach to the successful IT-projects implementation.
2. An agile project management, compared to traditional. Roles and responsibilities in agile management. Preparatory phase of an agile project. The key factors of success.
3. The principles of agile project organization. The life cycle of a software development during agile development. Interaction between participants. The processes and artifacts.
4. The principles of an iterative development approach. Prioritization and periodization (time boxing).
5. Manageability - maintaining control in agile projects. Risk management.
6. Definition of requirements and evaluation of resources in the agile projects. Agile scheduling.

7. Definition of quality policy and objectives. Quality planning, management and assurance.

References:

The main textbooks

1. «Agile manifesto», <http://agilemanifesto.org/>
2. Craig Larman. Agile and Iterative Development: A Manager's Guide. Addison-Wesley. 2004. ISBN 978-0-13-111155-4.
3. Jonathan Rasmusson. The Agile Samurai: How Agile Masters Deliver Great Software. Pragmatic Bookshelf (October 2, 2010) Pragmatic Programmers Series. ISBN-10: 1934356581, ISBN-13: 978-1934356586
4. "Guide to Agile Practices" - the Agile Alliance. <http://guide.agilealliance.org/>
5. Jim Highsmith. Agile Project Management: Creating Innovative Products (2nd Edition) – 2009, ISBN-10: 0321658396, ISBN-13: 978-0321658395.

Additional textbooks

6. Pankaj Jalote. Software Project Management in Practice. Addison-Wesley Professional; 1 edition (February 10, 2002) ISBN-10: 0201737213, ISBN-13: 978-0201737219
7. Abrahamsson, P., Salo, O., Ronkainen, J., & Warsta, J. (2002). Agile Software Development Methods: Review and Analysis. *VTT Publications 478*.
8. Allan Kelly Changing Software Development: Learning to Become Agile. Wiley; 1 edition (February 19, 2008). ISBN-10: 047051504X, ISBN-13: 978-0470515044
9. James Shore, Shane Warden. The Art of Agile. O'Reilly Media (November 2, 2007), ISBN-10: 0596527675, ISBN-13: 978-0596527679