

Mathematical problems and simulation models in e-learning course of IT project management

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Mathematics is recognized by the IT professionals as one of basic competencies. “Mathematics provides a language for working with ideas relevant to the field of IT, specific tools for analysis and verification, and a theoretical framework for understanding important computing ideas” [1]. However, very often the discussions with the students of Computer Science arise about the importance and role of Mathematics in their career. The courses of Mathematics provide theoretical background but its applications follow in succeeding courses one or several semesters later. Thus, in earlier stage of their learning, students do not feel the suitability of the Mathematical methods, but on latter courses they sometimes do not find relation between theory and practice.

Analysis of most important topics of Mathematics has conducted as a part of requirement analysis for development of simulation game to be up a main component of IT project management e-learning course for Computer Science students. The main results will be analysed in the report. The introductory course of IT project management consists of pure management topics requiring very few knowledge on Mathematics, i.e., to develop budget of the project, to get estimation of necessary workload, etc. However, in their self-evaluation inquiry, the most of students have marked the competencies of Mathematics as one with highest improvement during the course [2]. The students have recognized that solving the tasks of the simulation game played during the whole course they have got advanced understanding of Mathematical topics learned before. More detailed analysis has conducted to specify more essential topics of Mathematics as prerequisites of the course.

The developed simulation game has several goals. The most essential one is to provide practical training supplementing theoretical lectures. The second one is to support integration of knowledge provided in different courses of the curricula. The last but not least one is to develop students’ communication skills. Several simulation models have developed in frame of the game generating situations that requires corresponding students’ actions and producing problems to be solved. Some of the simulation models will be described in the report.

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References

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