доц. Едуардо Миранда ще проведе интензивен изборен курс по покана на тема

Estimating Software Development Projects

/Оценка на софтуерни проекти/

за студенти бакалаври от специалностите СИ, КН, ИС, И, магистри, докторанти и интересуващи се преподаватели.

от **02.06** до **8.06.2014** г.

летен семестър 2013/2014 учебна година.

Занятията ще се провеждат както следва: **част1 от 02.06** (понеделник) **до 05.06** (четвъртък) от **9:00 – 12:00 и 13:00 – 16:00** в зала **А207 на ФзФ**, част 2 на курса ще се проведе на **07.06** (събота)и **08.06** (неделя) и часът и мястото ще бъдат уточнени допълнително.

Dr. Miranda, is an Associate Professor at the Master of Software Engineering Program at Carnegie Mellon University where he teaches courses on estimation, project management and quality issues. Before joining CMU in 2008, he worked in Canada for twenty years for companies such as Ericsson Research and Lockheed Martin. Dr. Miranda is the author of the book "Running the Hi-Tech Project Office" published by Artech in 2003. Beside his book on project management offices, Dr. Miranda has authored numerous articles on requirements analysis, the use of reliability growth models in project management, estimation techniques, and the calculation of contingency funds for projects.

Other relevant information:

http://mse.isri.cmu.edu/software-engineering/Faculty/miranda-eduardo.html

ESTIMATING SOFTWARE DEVELOPMENT PROJECTS

Good estimates are defined as those that enable project success at a minimum cost. Unrealistically small, as well as unnecessarily large, estimates result in the misallocation of resources and wasteful spending and are one of the most important causes of project failures. To be accepted, a good estimate needs to be defensible. This means that the estimates must be explicit, based upon known capabilities and incorporate quantified uncertainty.

The course "Estimating Software Development Projects" consist of two sections. "First Principles Estimation for Software Projects" and "Probabilistic Cost Estimation and Risk Management for Software Projects".

First principles estimating is the calculation of project-specific costs based on a detailed study of the resources required to accomplish each activity of work contained in the project's work breakdown structure or in other words, estimating based on what we know. We will contrast this type of estimation with reference class forecasting, estimating based on the idea that the project at hand is just one instance of a class of projects and that the resources necessary will not be on average very different from other projects in the class and discuss when to use one or the other. Specific points that will be covered in this section include: early scope definition, sizing techniques and converting effort estimates to duration estimates. This section will be offered at Sofia University.

Probabilistic Cost Estimation and Risk Management refers to the use of statistical techniques to consistently deal with the things we do not know: the assumptions in our project and the normal variations that exist in the execution of every task. Consistently means that the calculation of reserve and contingency funds at the project level are congruent with how sure are we about our estimates at the deliverable or task level. Topics in this section include: uncertainty classification, subjective probabilities, modelling the lack of knowledge, Monte Carlo simulation, calculating management reserves, estimating typical risk responses, calculating contingency funds for a single project, calculating contingency funds across the project portfolio. This section will be be offered at New Bulgaria University.

The course puts emphasis on the process followed to prepare the estimate, the cognitive biases and administrative behaviors that afflict the estimation process and the integration of cost estimation and risk management.

Target audience:

The primary audience for this course are advanced and graduate students with a background in computer programming or business analysis, project managers and other experienced informatics professionals involved in the development of estimates, business cases and project plans. Other practicing engineers will find some of the concepts applicable to their own disciplines but the examples and the presenter's expertise come from software development.

Course organization

Both sections are self-contained but it is strongly recommended that a participant interested in the second part also takes the first one.

Lectures & hands-on work last 6 hours per day. It is recommended that participants bring their computer for the exercises. Time for lunch and breaks is additional. In the first part of the course participants will use WBS Chart Pro to create a WBS (http://www.criticaltools.com/wbschartprosoftware.htm) for the Time Reporting System. In the second part they will use @Risk (http://www.palisade.com/) to calculate management reserves using the Monte Carlo method.

	Topics	Hands on
Part 1: First Principles Estimation for Software Projects		
Monday	General issues in cost estimation (1) Back of the envelope calculations (1) Cognitive biases and administrative (1) behaviors	Time Reporting System (1). Fermi questions (1). Cognitive bias demonstrations (.5)
Tuesday	Understanding and documenting the scope of work (3)	Develop WBS for Time Reporting System (3)
Wednesday	Estimation methods overview (4). Structured expert methods, Functional size measurement, analogy and parametric methods.	Planning Poker (1), Paired comparisons, Function Point (1), CoCoMo
Thursday	From effort to schedule (2). The politics of cost estimation (1)	Planning the Time Reporting System (3)
Part 2: Probabilistic Cost Estimation and Risk Management for Software Projects		
Saturday	Introduction to variation risk and risk (1). Effort distributions (1). Analytical and Monte Carlo techniques (1). Incorporating buffers in Agile projects (1)	Calculation of management reserve for a sample project using @Risk (1)
Sunday	Risk management (1). Estimating the cost for avoid, mitigate, transfer and accept responses (1). Self-insurance vs. risk pooling across the project portfolio (1). DSM approaches to risk and change propagation (1)	Calculation of contingency funds for a sample project (2)