You will use on Monday what we will teach you on Friday!

Innopolis University offers advanced training for top managers and senior executives, technical directors and team leads.

**Purpose of training:** development of key skills necessary for software management and application of IT solutions. The training is based on the joint experience accumulated by Innopolis University and Carnegie Mellon University, which is a well-known educational and research institution focused on software development.

The training is designed for a wide range of organizations, in particular, banks, insurance companies, public services, industrial companies, healthcare organizations and other institutions that depend on software engineering and application of IT solutions. Selection of the training format and its content depends on individual requirements and specific goals of the company.

The course is delivered by the faculty members of Innopolis University. Please, find a brief information about the lectors below:

---

**Aleš Živkovič**

Aleš is an Associate Professor at the University of Maribory, Slovenia, where he received his PhD in Computer Science (2005). His research work covers different aspects of software development with the emphasis on UML, software processes, Java platform and software metrics. Being in IT for almost 20 years Aleš has advanced from a member of the development group to a consultant and a project manager. Besides, Aleš authored over 100 articles published in international journals and conference proceedings.

---

**Mohamad Kassab**

Mohamad is an Associate Professor at Pennsylvania State University. Mohamad graduated from Concordia University, Canada, with a Master’s degree. In 2009 Mohamad obtained his PhD in Computer Science at the same university. His area of expertise includes Software Systems Design, Pattern-Oriented Design, and Software Architecture.
Training format: the training has a flexible structure and is designed in two main formats: development of certain skills (generally, it is a short-term course for company top managers) or a full course focused on building of new competencies (it is a long-term course that employees usually combine with their job).

English is the language of instruction. Translation services are provided if necessary.

Training topics:

- **Management (development of certain skills)**
  - IT Management
  - People Track
  - Process Track
  - Courses in Technology
  - Software Architecture
  - Cyber Security
  - Virtualization and Cloud Computing

- **Operation (building of new competencies)**
  - Modeling of Information Systems
  - Requirements Management
  - Software Management
  - Analysis of Software Artifacts (QA)
  - Architecture of Information Systems

Detailed description of People Track and Process Track is provided in the Annex 1 and Annex 2. Description of other courses is available upon request.
Annex 1 People Track

«In all my years of Software development I have seldom seen a project fail because of technology; the majority have failed because of people issues!»

James Tomayko  
First Director of MSE Program

The aim of this track is to improve a set of soft skills required for successful team and project management in software engineering. The track includes three courses:

- Teambuilding for Technical Professionals
- Effective Decision making in a Technical Environment
- Stakeholder Management

Target Audience

- Project Team Leads
- Project Managers
- Experienced Practitioners working in teams
1.1. Teambuilding for Technical Professionals

Duration: 2-Day workshop

1.1.1. Course Description
This workshop covers the principles and concepts of teamwork, teambuilding and team lifecycle as experienced in typical software development projects. The main purpose of this workshop is to provide managers, team leads, and team members with the knowledge and skills they need to effectively lead others in their professional environment.

1.1.2. Course topics will include:
- Personality types and their effect on effective teamwork
- The four phases of group development / Tucker’s team cycle model
- Team skills and how to use them in effective team management
- Team culture and diversity and how to deal with it
- Maximizing team communications, with in the team and across distributed teams
- Tailoring team processes

1.1.3. Who Should Attend
- Project Managers
- Project Team leads
- Experienced Practitioners working in teams

1.1.4. Course Prerequisites
- There are no pre-requisites for this workshop

1.1.5. Course Objectives
After completing this workshop, participants will be able to:
- Understand stages in team lifecycle and how to take advantage of it
- Manage teams more effectively
- Effectively use various communication techniques within their team and with intra-organizational teams
- Understand the role of team process and how to make it effective
1.2. Effective Decision-Making in a Software Environment
Duration: 2-Day workshop

1.2.1. Course Description
In today’s fast-paced world, simply making decisions is not good enough. Managers and customers expect our decisions to be efficient, relevant and on target. Effective decision-making requires elements that bridge theory and practice and sometimes go beyond our own personal experience. This workshop covers the elements of effective problem solving and decision making by letting participants practice tools, strategies and techniques that have been proven to work so as to enable them to do just that, almost immediately after the workshop. Creative decision making will be explored in depth as one of the strategies taught. This is a hands-on workshop where exercises and activities allow participants to learn how to make better, more effective decisions using in-class scenarios.

1.2.2. Course topics will include:
- Decision making models
- Patterns of problem solving and decision making
- Creative decision making strategies

1.2.3. Who Should Attend
- Decision Makers
- Experienced Practitioners, Team Leads and Managers
- Those interested in improving their decision making skills

1.2.4. Course Prerequisites
There are no pre-requisites for this workshop.

1.2.5. Course Objectives
After completing this workshop, participants will be able to:
- Understand the steps in effective problem solving
- Understand the elements of effective decision making
- Strengthen their problems solving and decision making skills
- Use tools, strategies and techniques for better decision making
- Use creative decision making as a tool in daily situations
1.3. **Stakeholder Management – Managing Personal Relationships**  
Duration: 2-Day workshop

1.3.1. **Course Description**  
This workshop focuses on understanding the importance of stakeholder relationship throughout the life cycle of software development. From internal stakeholders (managers, team-mates, marketing etc.) to external stakeholders (customers, users, sub contractors etc.) we need to manage those relationships to build a successful product and work on a successful project. This workshop will cover the principles, guidelines, elements and techniques of doing just that in an interactive hands-on way. A section will be devoted to handle those situations where things do not go as planned and conflict resolution has to take place.

1.3.2. **Course Topics will include:**
- Principles and elements of stakeholder relationships
- Guidelines for managing effective stakeholder relationships
- Strategies/Techniques on how to reduce/resolve issues that negatively affect our relationships
- Elements of conflict resolution and how to effectively manage it

1.3.3. **Who Should Attend**
- Project Managers
- Project Team Leads
- Experienced Practitioners

1.3.4. **Course Prerequisites**
There are no pre-requisites for this workshop

1.3.5. **Course Objectives**
After completing this workshop, participants will be able to:
- Understand what are the principles of stakeholder relationships and how to effectively manage them
- Understand how to build strong relationships with customers, managers as well as developers
- Understand some of what may go wrong in a relationship and how to manage it correctly / “Fixing” a bad relationship
- Explore techniques of conflict resolution
Annex 2 - Process Track

The focus of the process track is on the management view on the software development process. It emphasize project planning and tracking, different estimation techniques tailored to software development, change and configuration management, risk management, software quality, personal and team software process. The track includes five courses:

- Estimation for the software professional
- Software project management planning
- Change Management (Managing product and process change)
- Work Product Inspections
- Disciplined and Agile software development

Target audience:
- Project Managers
- Project Team Leads
- Experienced Practitioners
2.1. Estimation for Software Professionals
Duration: 2-Day workshop

2.1.1. Course Description
This workshop covers the principles and concepts estimation for the point of view that there are three main times to estimate a project. The workshop discusses the tools and techniques that any attendee can use to improve their estimation in all phases of a project. A few of these techniques that are covered in the workshop are as follows: Wideband Delphi, proxy estimation, COCOMO and function point. These techniques are provided as tools that student can use to improve the estimation process already used or develop a new better estimation process.

The workshop is broken up into four modules to help the attendee more easily acquire the knowledge.

2.1.2. Course topics will include:
- The three times at which estimation should be considered critical to the software lifecycle
- Estimation techniques when attempting to win the bid
- Estimation techniques to get a detailed estimate
- Estimation to consider during the project or in response to change
- How estimation is tied to project tracking
- The metrics that should be collected to improve estimation

2.1.3. Who Should Attend
- Project Managers (uncomfortable with software project estimation)
- Project Team leads
- Experienced Practitioners
- Design Engineers Responsible for Estimation

2.1.4. Course Prerequisites
There are no pre-requisites for this workshop
2.2. Software project management – what to do and when to do it
Duration: 2-Day workshop

2.2.1. Course Description
Software intensive projects are difficult to manage. This workshop is designed to teach new managers and project leaders the basic concepts of how to status and track a project. The basic needs of how to understand where you are in a software project and what a team should be aware of when dealing with complex projects. The workshop will discuss the unique aspects of software projects and what makes these projects complex.

2.2.2. Course topics will include:
- What does project management mean
- Why are software development projects hard
- What are the industry best practices when it comes to status and tracking of software projects
- Who are the beneficiaries of software project management
- What are the different styles of management and the benefits of each
- Project management tools

2.2.3. Who Should Attend
- Project Managers
- Project Team Leads
- Software Engineers

2.2.4. Course Prerequisites
- Familiarity with a project management tool such as MS project
- Ability to use Gantt and PERT charts to understand project constraints
- Project development experience

2.2.5. Course Objectives
After completing this workshop, participants will be able to:
2.3. Work product Inspections
Duration: 1-Day workshop

2.3.1. Course Description
Attending this workshop will help you understand not only how to perform work product inspections, but why the inspection filtering process is important. The attendee will understand the difference between inspections and reviews. The attendee will also learn when each technique is appropriate and the reasons to use the technique.

2.3.2. Course topics will include:
- What are inspections are reviews
- The basic tenant of why these techniques are successfull
- The direct and indirect benefit of these techniques
- How to conduct a product inspection
- Best practices of inspections

2.3.3. Who Should Attend
- Anyone interested in improving the quality of software products

2.3.4. Course Prerequisites
There are no pre-requisites for this workshop
2.4. Change Management – Managing product and process changes in an organization
Duration: 1-Day workshop

2.4.1. Course Description
This workshop will discuss the basic tenets of change and how to deal with the effects of change on your product and on your processes. It will look at organizational change that is required to deal with software process improvement, technology integration and people management. The workshop will examine the key areas of change management that effect capability maturity model key process areas.

2.4.2. Course Topics will include:
- What is change management
- Change
  - Where does it come from
  - How do you change the organization to manage
  - Tools that you can use to help manage change
- Evaluating change management in practice
- Case studies

2.4.3. Who Should Attend
- First Line Managers
- Team Leads
- Experienced Practitioners
- Development Engineers

2.4.4. Course Prerequisites
There are no pre-requisites for this workshop.

2.5. Disciplined and Agile software development
Duration: 2-Day workshop
2.5.1. Course Description
This workshop will provide the attendee with a basic understanding of the concept of statistical based software development. In particular, the workshop will provide the attendee with enough understanding of the PSP and TSP principals to make an intelligent decision on whether to learn these techniques in detail and whether they are appropriate for the attendees organization.

2.5.2. Course topics will include:
- What is the Personal Software Process (PSP)
- How does the PSP work
- What are the benefits and the drawbacks of the PSP
- When is it best applied
- What is the Team Software Process (TSP)
- How is the TSP related to the PSP and how does TSP work
- What are the greatest benefits of the TSP technique

2.5.3. Who Should Attend
- Software development Engineers
- Software Team Leads and Managers
- Managers interested in learning more about the PSP and TSP

2.5.4. Course Prerequisites
Should be attended by people with software development experience.