## Internet applications and multimedia

## Syllabus

### Pre-requisites

Required knowledge and experience:

• Technical English. Learners will have to search, read and write in English.

• Basics of programming. Students will write programs and scripts for webapplications.

• Basic knowledge of computer graphics and video technologies. This is optional: students will be provided the links to complete insufficient knowledge in case they had not passed appropriate courses before.

### Course Type (compulsory, elective, optional)

Elective

### Abstract

“Internet applications and multimedia” course is taught in 1–3 modules on the 4th year of bachellor programme for students of the Department of Computer Engineering. First two modules are dedicated to web-development and internet applications (Internet applications block), the third module is an intensive dip into videostreaming applying to web-based communication (video unit).

Internet Applications block focuses on learning the basics of the development of Internet applications like network basis of various projects: business projects, research projects, and so forth.

The student will:

• get an idea about the basic concepts and principles of the development of Internet applications and Internet programming,

• gain practical knowledge on the basics of the development of Internet applications and Internet programming and the basics of websites design in various design technologies and the basics of programming Internet applications of various software tools.

Video unit continues previously learned "Videotechnologies" and is also based on "Computer Graphics" course taught for Department of Computer Engineering students. It narrows the scope of topics to implementation of all knowledge from previously learned courses to practical solutions and project work resulted in completed, ready to present video/web-oriented projects.

The following main topics are covered: Manipulation with audio and video streams. Broadcasting, compression, quality control. Advanced automatic video processing, live video decoration. Project work and practice. Workflow management. Case studies.

### Learning Objectives

Internet Applications block is focused on the technology of Internet applications development and Internet programming. As a result of studying the discipline a student must understand and be able to explain the basic concepts and principles for the development of Internet applications and Internet programming. Students will aquire basic skills in:

• Internet programming,

• web design and design technology,

• programming of various software tools for the Web.

Multimedia unit provides integration and implementation of skills and knowledge of computer graphics, web programming and videotechnologies for resultative video and web-oriented multimedia engineering projects.

More attention is paid to technical aspects than to artistic side of video and multimedia. Despite that, basics of composition, camera work and editing techniques are included to guarantee high overall level and complete coverage of work in the field.

### Learning Outcomes

Internet Applications block

Target competencies:

• Develop sites for different purposes (Business projects, research projects, on-line businesses, etc.);

As a result of studying the discipline a student must:

Target knowledge:

• basics for the development of Internet applications and Internet programming,

• principles of sites design and design technology,

• basic programming sites of various software tools.

Target skills:

• develop Web-applications using design technology and Internet programming.

• Internet programming in the development of Web-applications.

Video unit will prepare the learners to be able to, and have experience in:

• preparing and running live video broadcasts on the Internet

• managing production and broadcasting workflow

• decoration of live screen

• live video editing