STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Multimedia systems		**1010332421010332072**

Field of study	Profile of study (general academic, practical)	Year /Semester
Information Engineering	**(brak)**	**1 / 2**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
-	**polish**	**elective**

Cycle of study:	Form of study (full-time,part-time)
Second-cycle studies	**full-time**

No. of hours					No. of credits
Lecture: **2**	Classes: **-**	Laboratory: **2**	Project/seminars: **-**		**5**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
(brak)	**(brak)**

Education areas and fields of science and art	ECTS distribution (number and %)
technical sciences	**100 5%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	K_W05: Student has comprehensive knowledge with theoretical foundations of IT system modelling and analysis. K_W08:has knowledge of advanced programming techniques and methods K_K01: potrafi myśleć i działać w sposób kreatywny i przedsiębiorczy
2	**Skills**	K_U05: Student is able to model and to analyse IT systems. K_U08: Student (in cooperative tasks) is able to formulate specifications for unusual and intricate IT systems.
3	**Social competencies**	K_K01: Student is able to think and work in a creative and inventive way.

Assumptions and objectives of the course:

To familiarize students with the techniques and standards for video compression and sound. To familiarize students with the techniques and multimedia standards multimedia. Practical use of encoders and execution ofweb programming languages

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. has knowledge of advanced programming techniques and methods - [K_W08]
2. Student has basic knowledge of special purpose IT systems. - [K_W12]

Skills:

1. Student (in cooperative tasks) is able to design and implement parts of unusual and intricate IT systems. - [K_U09]
2. Student is able to evaluate the usefulness of IT tools and technologies for a given IT task. - [K_U10]

Social competencies:

1. Student understands the necessity of distributing information on computer science advancements and other issues related to computer engineer work. Student tries to distribute the information in a clear way and to present the facts from different points of view. - [K_K02]

Assessment methods of study outcomes

Lecture: written final test examination checking basic knowledge of basic multimedia compression technology platforms and web programming and multimedia.

Project: Analysis of the performance of the encoders depending on the profiles and parameters.

Analysis of the completed projects on various web development platforms.

Course description

Lecture: Introduction to Signal Processing (sampling, a method of prediction, transform, transformation Z), lossy compression of images and sound by international standards MP3, AAC, standard JPEG, JPEG 2000, MPEG-4, H.264. Network issues associated with the transmission of digital video and audio.

The Document Object Model (Document Object Model, DOM) - the representation of complex XML and HTML documents in the form of the object model.

JavaScript - a scripting language used to build Web pages. PHP and Ajax.

Application Servers. Language HTML 5

Standard Scalable Vector Graphics (SVG).

Projects: 1 AAC encoding (Nero) and H.264 (x264) using libraries and platforms(audiocity MeGUI).

2. Execution of applications on the DOM, XQuery, and a graphical representation of a DOM tree using SVG

3. Performance of Ajax applications (using development platforms: jQuery, Ruby on Rails, Symfony) using MySql database and the data format JSON

Serwery aplikacji. Język HTML 5.

Standard Scalable Vector Graphics (SVG).

Projekty: 1. Kodowanie AAC (Nero) i H.264 (X264) przy pomocy bibliotek oraz platform MeGUI i audiocity.

2. Wykonanie aplikacji na drzewie DOM, XQuery i graficzna reprezentacja drzewa DOM przy użyciu SVG

3. Wykonanie aplikacji Ajax (przy użyciu platform programistycznych: jQuery, Ruby on Rails, Symfony) z wykorzystaniem bazy danych MySql i formatu danych JSON

Basic bibliography:

1. Nicholas C. Zakas, Professional JavaScript for Web Developers (Wrox Programmer to Programmer) [Paperback] 2009 | Series: Wrox Programmer to Programmer | Series: Wrox Programmer to Programmer, 2009

2. Cristian Darie et al., AJAX and PHP Building Responsive Web Applications, Packt Publishing, 2006

Additional bibliography:

1. Materials http://killerajax.com/

2. W3C, H.264 i AAC standards

Result of average student's workload

Activity	Time (working hours)
1. Lectures	30
2. Laboratories	30
3. Preparation to laboratories	30
4. Preparation of laboratory reports	15
5. Independent work on the lecture topics	20

Student's workload

Source of workload	hours	ECTS
Total workload	125	5
Contact hours	60	2
Practical activities	75	3