STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Contemporary internet technologies		**1010335531010337155**

Field of study	Profile of study (general academic, practical)	Year /Semester
Information Engineering	**(brak)**	**2 / 3**
Elective path/specialty	**Subject offered in:**	**Course (compulsory, elective)**
Information Technologies	**Polish**	**obligatory**

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

No. of hours					No. of credits
Lecture: **16**	Classes: **-**	Laboratory: **16**	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	**5 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	1. Student has knowledge acquired during first-cycle studies. 2. Student has relevantly deepened and theoretically grounded knowledge on modeling and analysis of information systems. 3. Student has knowledge on advanced methods and techniques of programming.
2	**Skills**	1. Student has skills acquired during first-cycle studies. 2. Student is able to model and analyze information systems. 3. Student can - working in a team - specify elements of non-typical or complex information systems.
3	**Social competencies**	Student can creatively think and act.

Assumptions and objectives of the course:

The main goal is to deepen students? knowledge concerning novel standards of the Semantic Web and also widening their skills in applying this knowledge to represent and process the semantics of data on the Internet.

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

Knowledge:

1. Student has knowledge on advanced methods and techniques of programming. - [K_W08]
2. Student has basic knowledge on chosen information systems having indicated features or purpose. - [K_W12]

Skills:

1. Student is able - when formulating and solving problems in computer engineering - integrate knowledge coming from different areas and scientific disciplines. - [K_U07]
2. Student is able to apply advanced tools and technologies of computer engineering. - [K_U10]
3. Student can - working in a team - design and implement elements of non-typical or complex information systems. - [K_U09]

Social competencies:

1. Student can creatively think and act. - [K_K01]

Assessment methods of study outcomes

Lecture: writing test with ratings, minimal score 50,1%.

Laboratory: rating of the presented ontological module accompanied by the information system whose conceptual basis is the ontology, and rating of the ontology&system?s documentation.

Course description

Lecture:

The notion of a well-founded ontology and its examples. Hints of how to create such ontologies, its designing and implementation methodologies and tools (modification 2017). Well-founded ontologies applications. Publicly available on the Internet data bases, their creation methods and principles of operation. Linked Open data Platform standard and its possible implementations (i. e. Apache Marmotta).

Laboratory (modification 2017):

Data semantics modeling via well-founded ontologies. Applying of the created model in the process of ontology-driven creation of elements of an information system (in the Apache Marmotta environment).

Applied methods of education:

a) lectures illustrated by slides and seminar-like thematic presentations prepared by students

b) laboratory: testing and using the tool (to suport building the well-founded ontologies) developed in our Institute and applying the obtained resources in modern LOD applications.

Basic bibliography:

1. Papers on methods and tools of ontology creation (detailed information given during lectures).

2. Internet portals concerned with ontology creation supporting tools and demos (detailed information given during lectures)

Additional bibliography:

1. Staab S., Studer R. (eds): Handbook on Ontologies, Second Edition, Springer, 2009.

2. Cybulka J., Supporting the Creation of Some Class of Well-founded OWL-DL Ontologies, Computational Methods in Science and Technology, vol.23, no 1, 2017.

Result of average student's workload

Activity	Time (working hours)
1. lecture	16
2. laboratory	16
3. exam and consultations	20
4. preparation for exam	40
5. preparation for laboratory	33

Student's workload

Source of workload	hours	ECTS
Total workload	125	5
Contact hours	50	2
Practical activities	50	2