STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Internet Technologies - Selected Issues		**1010331561010337132**
Field of study: **Information Engineering**	Profile of study (general academic, practical): **(brak)**	Year /Semester: **3 / 6**
Elective path/specialty: **Information Technologies**	Subject offered in: **Polish**	Course (compulsory, elective): **obligatory**
Cycle of study: **First-cycle studies**	Form of study (full-time,part-time): **full-time**	
No. of hours: Lecture: **30** Classes: **-** Laboratory: **30** Project/seminars: **-**		No. of credits: **5**
Status of the course in the study program (Basic, major, other): **(brak)**	(university-wide, from another field): **(brak)**	
Education areas and fields of science and art: **technical sciences**		ECTS distribution (number and %): **5 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	1. Student has structured and methodologically grounded knowledge on software engineering. 2. Student has structured and theoretically grounded knowledge on network technologies. 3. Student has structured and theoretically grounded knowledge on databases and warehouses.
2	**Skills**	1. Student can use programming platforms and environments to design, run and debug simple programs written in imperative, object-oriented and declarative programming languages. 2. Student is able to design and implement a simple database or warehouse and he/she can formulate simple queries to it.
3	**Social competencies**	Student knows that she/he is obliged to perform well her/his job and also knows that she/he is obliged to perform well the part of assigned to her/him part of teamwork.

Assumptions and objectives of the course:

Presenting widely used and novel standards concerning the problem of representing information in the Internet, especially in Semantic Web and Web 2.0 paradigms. Developing skills in collaborative design and implementation of Semantic Web and Web 2.0 applications.

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

Knowledge:

1. . Student has structured and theoretically grounded knowledge on internet technologies. - [K_W11]
2. Student has knowledge on state-of-the-art and modern trends in computer engineering. - [K_W19]

Skills:

1. Student can design and implement basic functionalities concerning internet portals and services. - [K_U15]
2. Student can work individually and in collaboration; is able to estimate time needed to perform the ordered task; is able to formulate a schedule of works to be done. - [K_U02]

Social competencies:

1. Student is aware of his/her responsibility for the work done and he/she is ready to comply the rules of work in a team and to bear the responsibility for the collaboratively performed task. - [K_K04]

Assessment methods of study outcomes

Lecture: writing exam (testing the knowledge concerning the basic standards and features of Semantic Web and Web 2.0 applications), minimal score 50,1%.

Laboratory: scored: a) presentation of a (fragment of collaboratively developed) running system/description of a practically developed resource b) submission of an individual report on a work done c) punctuality of work.

Course description

Lecture:

Internet information systems (definition, classes of architectures, classification of systems). Web generations. Representing and processing of data on the Web (markup languages and their application interfaces: SGML, HTML, HTML5 and the XML family). Notion of a ?semantic metadata?. Standards of metadata (RDF and RDFS). Semantic Web (ideas, tools and applications): a notion of a (computational) ontology, classifications of ontologies, selected ontologies and their creation&processing methodologies; OWL and OWL2 languages; selected ontology editing and processing tools. Rule-based representations of data on the Web: SWRL language. Querying Web metadata via SPARQL. The idea and basic features of of Web 2.0/3.0. Linked Open Data (LOD). DBpedia and YAGO 2/3 knowledge bases.

Laboratory:

Collaborative designing and implementing modules of applications that are elements of the ?Environment to semantics-directed creating and exploiting of an information system?:

1., 2. Acquiring the features of the legacy environment and the task to be done; forming the working team and selecting its leader; methodology selection and assigning tasks to the team members.

3. Writing the report on the ?introductory work? and making the individual work schedule.

4. - 8. Working on tasks.

9. Reporting works done (a model, an algorithm, chosen tools and technologies).

10. - 12. Working on tasks.

13. Multimedia presentation of the obtained results, chaired by the team leader.

14. Writing final individual reports of work done. Writing the whole final report (by the team leader.

15.Summary.

Basic bibliography:

1. W3C recommendations W3C http://www.w3.org/TR.

2. RFC documents.

3. Thematic Internet portals.

Additional bibliography:

Result of average student's workload

Activity	Time (working hours)
1. lecture	30
2. laboratory	30
3. exam and consulting hours with the teacher	10
4. preparation for exam	10
5. preparation for laboratory	45

Student's workload

Source of workload	hours	ECTS
Total workload	125	5
Contact hours	50	2
Practical activities	75	3