Doctoral school
COURSE PROPOSAL

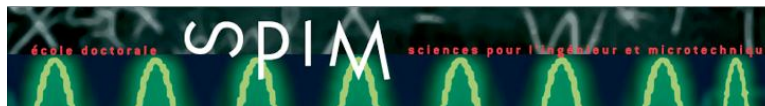| Title:	The Web of data : from WWW to GGG	Acronym:	WOD

instructor(s)   Fill in one line for each instructor   Indicate name, lab/department, institution, status and email address

Total hours for each   instructor (max=14h):

Last Name	First name	Lab./Dpt	Institution	Status	Lecture	Exercises	Pract. Work
ROXIN	Ana	LE2I/IEM	UFR S&T	MCF	4		3
Email address	ana-maria.roxin@u-bourgogne.fr						
NICOLLE	Christophe	LE2I	IUT INFO	PR	4		3
Email address	cnicolle@u-bourgogne.fr						
Email address							
Email address							

Total	8	0	6

Examination procedure

Oral:		Oral presentation:		Written:		Written & oral:	
Project report:	☒	Term paper:		Multiple:		Other:	

Schedule

Year:	2013/2014	from:	September 2013	to:	February 2014

Frequency:	2 days * 7h	Maximum number of participants:	24

Proposed location	room	G201	address	Faculté des Sciences Mirande 9 Rue Alain Savary, Dijon
	building	ESIREM	city	Dijon

Course description

Learning outcomes

This course will give an overview of the principles of Linked Data along with the Web of Data, as it emerged through the application of these principles. Notably this course will present patterns for publishing Linked Data, how to deploy Linked Data applications along with a discussion of the underlying architectures.

This course also presents the concepts and definitions related to the Semantic Web (or Web of Data) vision, notably what is an ontology, how it can be modeled, what are the existing languages for ontology modeling, as well as how one can infer and reason using knowledge modeled as an ontology.

Content

1) The Linked Data context
- The data deluge
- The need for Linked Data
- From data islands to a Global Giant Graph (GGG)

2) The Semantic Web vision
- Introduction to the Semantic Web technologies
- Semantic Web architecture
- Semantic annotation and retrieval: the Web of Data
- Storing the Semantic Web: the repositories
- Querying the Semantic Web: SPARQL

3) The principles of Linked Data
- Naming things with URIs
- Making URIs dereferenceable
- Providing useful RDF information
- Including links to other things

4) Linked Data considerations
- Using URIs as names for things
- Describing things with RDF
- Publishing data about data
- Choosing and using vocabularies
  - SKOS, RDFS, and OWL
  - Reusing existing terms
  - Selecting vocabularies
  - Defining terms
- Making links with RDF

5) Ontologies and the Semantic Web
- Foundations: notion of ontology, origin and definition, formal ontology model, ontology languages, etc.
- Engineering and methodological aspects
- Example applications

6) Knowledge representation and reasoning on the Semantic Web: OWL
- History and influences
- OWL 2 Language
- Semantics for OWL 2
- OWL 2 Profiles
- OWL 2 tools and applications

Keywords:	Semantic Web, Linked Data, ontologies, RDF(S), OWL, OWL 2, SPARQL, Protégé
Required prior knowledge:	Computer science, database modeling basics, information systems
Form of examination:	The students will have to create project groups (max 4 students), and each of them will be assigned a project aiming to implement an ontology using the Protégé software.
Note:	
URL:	http://