1. **Title of the module**

COMP6440 (CO644) – Semantic Web

1. **Division or partner institution which will be responsible for management of the module**

Division of Computing, Engineering, Mathematical Sciences (CEMS)

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 6

1. **The number of credits and the ECTS value which the module represents**

15 credits (7.5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Autumn or Spring

1. **Prerequisite and co-requisite modules**

Pre-requisites: COMP5200 Further Object-Oriented Programming

1. **The course(s) of study to which the module contributes**

BSc Computing
BSc Business Information Technology

BSc Computer Science and variants

BSc Software Engineering

BSc Artificial Intelligence
Computing Joint Honours courses

*“*Year in Industry” equivalents

1. **The intended subject specific learning outcomes.
On successfully completing the module students will be able to:**
	1. Demonstrate a systematic understanding of what the Semantic Web is and how it facilitates use of and reasoning about web resources
	2. Make effective use of metadata and inferencing
	3. Deploy ontologies for classification and organisation of knowledge
	4. Have developed a critical awareness of current research directions in the field of Semantic Web technologies
	5. Have developed a critical awareness of state-of-the-art techniques for automated information gathering
	6. Have gained a conceptual understanding of privacy and trust issues relating to the use of Semantic Web data
2. **The intended generic learning outcomes.
On successfully completing the module students will be able to:**
	1. Make effective use of general IT facilities
	2. Make effective use of internet-based information retrieval
	3. Communicate technical issues clearly in a written format
	4. Manage their own learning and development, including time management and organisational skills
3. **A synopsis of the curriculum**

Indicative topics include:

* Resource Description Framework (RDF) & RDF Schema:
* Information representation and knowledge exchange on the web
	+ Applications of RDF
* RDF Query and Inference Languages (e.g. SPARQL etc.)
* Web Ontology Language (OWL):
	+ Publishing and sharing of ontologies
* Knowledge management, asset management, enterprise integration
	+ Automated agents
* Existing Shared Ontologies (e.g. FOAF, DC, SKOS etc.)
* Metadata and Provenance
* The Wider Picture:
	+ Data trust and proof issues
	+ Computer law and professional issues
* The future of the Web (these lists are not exhaustive):
	+ Web 3.0: the Semantic Web; cognitive architecture; automated reasoning; distributed computing; composite applications; semantic wikis etc.
* Aim to give students the tools to critically evaluate the Semantic Web (and alternative proposals)
1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

Allemang, Dean & Hendler, Jim. (2011). *Semantic Web for the Working Ontologist*. 2nd ed, Morgan Kaufmann.

Antoniou, Grigoris. & van Harmelen, Frank. (2012). *A Semantic Web Primer*, 3rd edn, MIT Press

DuCharme, Bob (2013). [*Learning SPARQL*](http://www.learningsparql.com/),2nd edn. O'Reilly.

Heath, Tom & Bizer, Christian. (printed book 2011, e-book updated regularly at [http://linkeddatabook.com/book)](http://linkeddatabook.com/book%29) *Linked Data: Evolving the Web into a Global Data Space*. Morgan Claypool.

Hitzler, Pascal et al. (2010). *Foundations of Semantic Web technologies*. CRC Press.

1. **Learning and teaching methods**

Total contact hours: 33 hours

Private study hours: 117 hours

Total study hours: 150 hours

1. **Assessment methods**
	1. Main assessment methods

2 courseworks (20 hours total) (50%)

2 hour unseen exam (50%)

13.2 Reassessment methods

Like for like.

1. ***Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)***

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | *8.1* | *8.2* | *8.3* | *8.4* | *8.5* | *8.6* | *9.1* | *9.2* | *9.3* | *9.4* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |  |
| **Private Study** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Lectures | **x** | **x** | **x** | **x** | **x** | **x** |  | **x** |  |  |
| Practical classes | **x** | **x** | **x** |  | **x** |  | **x** | **x** |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |
| Coursework | **x** | x | **x** |  | **x** |  | **x** | **x** | **x** | **x** |
| Examination | **x** | **x** | **x** | **x** | **x** | **x** |  |  | **x** | **x** |

1. **Inclusive module design**

The Division recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

The topics addressed by this module relate to a field which is of international importance, given the global role of computers in today's technological innovation. The topics covered by this module are international in nature, being identical worldwide and independent of traditional spoken language.

**DIVISIONAL USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 23/11/2020 | Minor | September 2021 | 7, 16 | No |
|  |  |  |  |  |