Module Descriptor 2016/17
School of Computer Science and Statistics.

<table>
<thead>
<tr>
<th>Module Code</th>
<th>CS7046</th>
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<tbody>
<tr>
<td>Module Name</td>
<td>Information Architecture</td>
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<tr>
<td>Module Short Title</td>
<td>N/a</td>
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<tr>
<td>ECTS weighting</td>
<td>5</td>
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<tr>
<td>Semester/term taught</td>
<td>Hilary Term</td>
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</table>
| Contact Hours | Lecture hours: 28
Lab hours: 4
Tutorial hours: 1
Total hours: 33 |
| Lecturing staff | Dr Rob Brennan |

**Learning Outcomes**

On successful completion of this module students should be able to:
- compare and contrast different approaches to modelling information and knowledge
- model information and produce rich semantic models and ontologies
- describe how formal models that underly meta-data enable inference and reasoning
- survey the state of the art in semantic technologies and applications
- use sophisticated querying approaches to facilitate distributed information retrieval and aggregation

The course is designed to explore the management, delivery and inter-operability of information and information systems. The course is not a typical database or information management course, but rather encourages students to perceive the challenges, technologies and solutions, in handling distributed, multi modal, heterogeneous information and knowledge.

The course focuses on WWW technologies (in particular semantic web technologies), to provide adaptive, agile handling of heterogeneous, ubiquitous information. The course includes such areas as integration of heterogeneous information repositories, schema (RDF) and semantic (e.g. ontology) representation and querying.

The main themes of the course are:
- Managing, integrating and transforming disparate information from heterogeneous sources
- Representing, Management, and Reasoning about semantics of information (and services)

**Module Content**

Specific topics addressed in this module include:
- Semantic Web
- Semantic Model Design
- Representing Semantics in metadata
- Semantic based querying in a distributed environment
- Semantic based reasoning
- Linked Data
- Schema Mapping
- The W3C Provenance Ontology

No text book is mandated, however the following are useful:
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| **Recommended Reading List** | Semantic Web Programming - J. Hebeler, M. Fisher, R. Blace and A. Perez-Lopez (Wily 2009)  
Programming the Semantic Web – T Segaran, C. Evans and J. Taylor (O'Reilly 2009)  
Semantic Web for the Working Ontologist D. Allemang and J. Hendler(Elsevier 2008)  
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<tr>
<td><strong>Module Pre Requisite</strong></td>
<td>Undergraduate courses in object-oriented programming/modelling or database/information modelling.</td>
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<tr>
<td><strong>Module Co Requisite</strong></td>
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| **Assessment Details**        | % Exam: 75  
% Coursework: 25  
25% of the assessment of the module will be based on evaluation of the following assignments: student research presentation (5%), the semantic model and application arising out of the small-group project (20%). 75% of the module assessment marks are awarded based on the exam.  
The qualifying mark to pass the exam and coursework is 50. Students must pass both the coursework and exam individually to pass the course. In the event of a supplemental exam being required 100% of the marks come from the supplemental exam. |
| **Module approval date**       | N/a                                                                                                    |
| **Approved By**               | N/a                                                                                                    |
| **Academic Start Year**        | N/a                                                                                                    |
| **Academic Year of Data**      | 2016/2017                                                                                                |