# Module Descriptor 2012/13

**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 and Knowledge 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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<tr>
<td>Contact Hours</td>
<td>Lecture hours: 28 Lab hours: 4 Tutorial hours: 1 Total hours: 33</td>
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<tr>
<td>Module Personnel</td>
<td>Lecturing staff: Dr Rob Brennan</td>
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| 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 |
| Module Learning Aims | 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  
  - Schema Mapping |
| Recommended Reading List | No text book is mandated, however the following are useful:  
  - 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)  
  - Linked Data: Evolving the Web into a Global Data Space – T. Heath and C. Bizer (Morgan &
Module Pre Requisite

Module Co Requisite

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.

Module approval date
N/a

Approved By
N/a

Academic Start Year
N/a

Academic Year of Data
N/a