F21BD Big Data Management

**COURSE DETAILS**

**Course Code:** F21BD  
**Full Course Title:** Big Data Management  
**SCQF Level:** 11  
**SCAF Credits:** 15  
**Available as Elective:** No

**DELIVERY LEVEL**

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**Additional Information:**

**COURSE AIMS**

- Review principle abstractions, methods and techniques for the management of large and complex data sets ("Big Data").
- Develop an understanding of the foundations and tools of the Semantic Web.
- Enable students to appreciate critically a range of data integration solutions.

**LEARNING OUTCOMES – SUBJECT MASTERY**

- A detailed and integrated knowledge and understanding of a range of data representation and data management techniques for big data sets.
- Critical understanding of the role of semantic web technologies in the context of big data management.
- Extensive knowledge of the mechanisms that underlie data integration techniques.
- To be able to demonstrate a critical understanding of appropriateness and effectiveness of different techniques.

**LEARNING OUTCOMES – PERSONAL ABILITIES**

- Conceptualize and define new abstract problems within the context of complex data sets.
- Deal with complex issues and make informed judgements about the applicability of semantic web solutions to big data questions.
- Exercise substantial autonomy, initiative and creativity in the application of data integration techniques.
- Demonstrate critical reflection. (PDP)
- Communicate with professional level peers, senior colleagues and specialists. (PDP)

**SYLLABUS**

**Complex data sets:**  
RDF, triple stores, SPARQL, Big Data vs Smart Data vs Broad Data, NoSQL, indexing data.

**Semantic Web Foundations:**  
RDFS, OWL, Ontologies, Reasoning, Protégé.

**Data Integration:**  
Linked Data, Mash-ups, Ontology mapping, Data Provenance.

Prerequisites: Academic knowledge of fundamentals of databases and logic.
### LOCATION AND ASSESSMENT METHODS

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Reassessment for postgraduates only