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**
- **Undergraduate:** Yes
- **Postgraduate Taught:** Yes
- **Postgraduate Research:** No

**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.
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| COURSE RELATIONSHIPS | N/A |

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Reassessment for postgraduates only