COURSE DETAILS
Course Code: F20BD
Full Course Title: Big Data Management
SCQF Level: 10
SCAF Credits: 15
Available as Elective: No

DELIVERY LEVEL
Undergraduate: Yes Postgraduate Taught: No 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
• 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.
• 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.
• Make informed judgements about the applicability of semantic web solutions to big data questions.
• Exercise 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.

COURSE RELATIONSHIPS
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