



## **DBLN CPSI 4496**

This course is being offered at Griffith College, CAPA's academic partner in Dublin. The Irish academic system differs from the US, particularly with grading. Griffith College professors expect students to undertake a good deal of independent study to achieve a high mark in their classes. For additional information about this class, please contact the Boston Program Advising Team at 1-800-793-0334.

### **Managing Big Data**

Continuous Assessment: 40%

Exam: 60%

### **Intended Module Learning Outcomes**

On successful completion of this module the learner will be able to:

1. Understand and perform the duties of a DBA
2. Implement query optimisation strategies
3. Recognise the important role of efficient transaction management with regards to concurrency control, database recovery and deadlock detection/prevention.
4. Understand the considerations surrounding the processing of Big Data
5. Describe and implement various strategies in Data Mining and Warehousing
6. Describe the use of Data Analytics on Big Data

### **Module Objectives**

There are two aims to this module: to expose you to practical issues in database management systems such as database administration and query optimisation; and to give you a flavour of the procedures and considerations in handling Big Data. In order to gain an understanding of how to work with Big Data, you gain an understanding of the core concepts required such as Data Mining, Data Warehousing and Data Analytics.

### **Module Curriculum**

#### **Database Management**

The role of the DBA / Security / User Management / Physical Database Issues

#### **Query Optimisation**

Use of indexing and keys / Optimising Joins / Optimising queries in a RDBMS

#### **Transaction Processing and Concurrency**

Transactions Stages; commit, abort, etc. / ACID properties / Concurrency problems; lost update, incorrect summary, dirty read etc. / Locking / Deadlock detection and prevention

## **Introduction to Big Data**

Data Model / Data Storage / Data Warehousing / Data Extraction,  
Transforming and Loading / Batch Processing / Scalability / NoSQL /  
Managing Big Data, Online Analytical Processing

## Data Mining

Structural Pattern Recognition / Input---Output / Clustering / Managing  
Data

Warehousing Models (Bottomf Up, Topf Down, etc.) / Data  
Transformation Models

## **Introduction to Data Analytics**

Extracting information from Big Data / Statistics / Case Studies