



## DBLN CPSI 3395

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.

### Systems Analysis and Design

Continuous Assessment: 70%

Exam: 30%

#### Intended Module Learning Outcomes

On successful completion of this module learners will be able to:

1. Develop the analytical skills necessary to apply abstract concepts in an object oriented manner
2. Express system solutions in a formal manner and implement the derived formalisation
3. Select and apply appropriate design techniques to system solutions
4. Produce correct software designs
5. Analyse a problem, produce high quality software designs using Universal Modelling Language (UML) notation and relate the software designs to the implementation
6. Develop a comprehensive set of testing routines for software and document the results.

#### Module Objectives

This module introduces you to the fundamental concepts of object oriented program design and how to use modelling for constructing complex software systems.

#### Module Curriculum

##### The Object Paradigm

- Classification: Objects and object types (classes);
- Abstraction;
- Encapsulation: Data and behaviour
- Information hiding: Access specifiers;
- Inheritance and polymorphism
- Aggregation and association

##### Unified Modelling Language

- Rationale and history of UML;
- Use case analysis;
- Structural view: Class and object diagrams
- Behavioural view: Sequence, collaboration, statechart, activity diagrams
- Environment view

##### Object Oriented Design

- Implementation options;
- Object oriented methodologies

- Use of iterative development;
- Introduction to patterns and anti-patterns

### **Software Testing**

- Software verification and validation
- Unit Testing, Integration testing, System testing
- User acceptance testing

### **Project Management**

- Role of project manager
- Life Cycle Model, Phases and deliverables,
- The project Team
- Tools: CPA, Gantt