## COURSE DETAILS

**Course Code:** F28DA  
**Full Course Title:** Data Structures and Algorithms  
**SCQF Level:** 8  
**SCAF Credits:** 15  
**Available as Elective:** No

## DELIVERY LEVEL

<table>
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<th>Undergraduate:</th>
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<th>Postgraduate Taught:</th>
<th>No</th>
<th>Postgraduate Research:</th>
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**Additional Information:**

## COURSE AIMS

To introduce core algorithms and data structures used in a wide range of applications in Computer Science.

To further develop skills in algorithm and data structure design, and the development of medium sized programmes.

## LEARNING OUTCOMES – SUBJECT MASTERY

- Ability to analyse and hence choose suitable algorithms and data structures for a given problem
- To design and implement medium sized programs based on a range of standard algorithms and data structures and making appropriate use of Libraries
- Understanding the distinction between abstract Abstract Data Type (ADT) properties and concrete ADT realisations
- Appreciation of need for integration of multiple ADTs in substantial programs
- Appreciation of efficiencies/reassurances from ADT reuse
- Appreciation of security aspects of algorithm complexity

## LEARNING OUTCOMES – PERSONAL ABILITIES

- To be able to critically analyse and hence choose suitable algorithms and data structures for a given problem
- To be able to convey the advantages and disadvantages of alternative data structures and algorithms
- To develop practical problem-solving skills in the context of programming
- To be able to plan & execute a substantial software project

## SYLLABUS

- Algorithm and data structure topics including: advanced trees, string processing, simple cryptography, graphs, hash tables
- Algorithm/data structure choice, design and deployment

## COURSE RELATIONSHIPS
## F28DA Data Structures and Algorithms

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Level</th>
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<td>Software Development 2</td>
<td>School of Math and Comp Sci.</td>
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### LOCATION AND ASSESSMENT METHODS

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