

# AMITY GLOBAL INSTITUTE

## MODULE SYLLABUS

Course	Bachelor of Science Honours in Computer Science (Games Development) (University of London)
Module Title	Algorithms and Data Structures II
Module Syllabus No. (if any)	CM2035
Syllabus / Content / Learning Outcomes	<p>This module aims to provide you with detailed knowledge of several common algorithms and data structures. You will improve your understanding of searching and sorting and learn new algorithms to solve new problems. You will learn about a range of data structures such as trees, heaps, sets, maps, stacks, queues and graphs. You will learn how to evaluate and describe the performance of algorithms using big-O notation. You will learn: how to choose appropriate data structures for representing problems, how to define and implement algorithms for manipulating them, and how to analyse the correctness and efficiency of algorithms.</p> <p>You will be expected to have mastered the material in Algorithms and Data Structures I before attempting this module.</p>
No. of Teaching Hours	Contact Hours – Lectures, Seminars & online activity (22 x 3) = 66 Independent Preparation, pre-reading and analysis = 84 TOTAL = 150
Teaching Methods	Lectures, tutorials, case-studies analysis, research journals and group discussion.
Assessment Methods and Weightages	One two hour unseen written examination and coursework Coursework 50% and Written examination 50% At least 35% in each element of summative assessment and a combined weighted average of at least 40%, subject to the application of rules for compensation.
Skills for Maximising Learning Outcomes	Reading and research
Dates of Examinations, Major Assessments and Assignments	Please refer to <a href="http://www.london.ac.uk">www.london.ac.uk</a> exam tables If your effective date of registration is: <ul style="list-style-type: none"> <li>• 1 October, you will take your first examination(s) in March of the following year,</li> <li>• 1 April, you will take your first examination(s) in September of the same year.</li> </ul>
Topics covered	<ul style="list-style-type: none"> <li>• Complexity, growth of functions and big-O notation</li> <li>• Stacks and queues</li> <li>• Binary trees</li> <li>• Heaps and priority queues</li> <li>• Implicit array algorithms</li> <li>• Recursion and Iteration</li> <li>• Graphs and simple pathfinding</li> <li>• Shortest-path algorithms</li> <li>• Sets, maps and hash tables</li> <li>• Collections</li> </ul>

Note: All Information provided to Amity will be kept strictly confidential except for those required under statutory requirements and by government authorities and relevant university partners and accreditation bodies as part of the regulatory or course requirements.