

ASSESSMENT AND INTERNAL VERIFICATION FRONT SHEET (Grouped Criteria)

(Note: This version is to be used for an assignment brief issued to students via Classter)

Course Title	BSc. Software Development BSc. Creative Computing BSc. Applied Data Science BSc. Digital Games Development			Lecturer Name & Surname	Andrew Cortis Kassandra Calleja	
Unit Number & Title		ITSFT-506-1608 – Data Structures & Algorithms				
Assignment Number, Title / Type		2 – Advanced Algorithms Implementation & Evaluation / Home				
Date Set		12/05/2025	Deadline Date	09/06/2025		
Student Name	Anthea Baldacchino		ID Number	0200701L	Class / Group	swd6.1b

Assessment Criteria	Maximum Mark
<p><i>KU2.7 : Explain the process known as the Fisher Yates Shuffle.</i></p> <p><i>KU3.1: Show analysis of estimate running times and compare implementation of efficient algorithms with inefficient algorithms.</i></p> <p><i>AA2.3: Produce an algorithm for Graphs or Tree structures. Also compute the best, worst and average case times.</i></p> <p><i>AA2.4: Produce an algorithm using the Binary Tree structure. Also compute the best, worst and average case times.</i></p> <p><i>AA2.5: Produce an algorithm using the queue data structure to prioritize data. Use a data structure such as a Heap and the Heapsort algorithm.</i></p> <p><i>SE2.6: Evaluate the applications of pseudo random number generator.</i></p> <p><i>SE2.8 : Implement three different sorting algorithms. Predict the rate of processing and evaluate and justify application for each algorithm.</i></p> <p><i>SE4.1 : Evaluate the features algorithms in relation to their correctness, proof and intractability.</i></p> <p>Total Mark</p>	61

Notes to Students:
<ul style="list-style-type: none"> This assignment brief has been approved and released by the Internal Verifier through Classter. Assessment marks and feedback by the lecturer will be available online via Classter (http://mcast.classter.com) following release by the Internal Verifier Students submitting their assignment on Moodle/Turnitin will be requested to confirm online the following statements: <ul style="list-style-type: none"> Student's declaration prior to handing-in of assignment <ul style="list-style-type: none"> ❖ I certify that the work submitted for this assignment is my own and that I have read and understood the respective Plagiarism Policy Student's declaration on assessment special arrangements <ul style="list-style-type: none"> ❖ I certify that adequate support was given to me during the assignment through the Institute and/or the Inclusive Education Unit. ❖ I declare that I refused the special support offered by the Institute.



MCAST

ITSFT-506-1608

Data Structures & Algorithms

First Year BSc. 2024-2025

Assignment 1

Advanced Algorithms Implementation & Evaluation

Assignment Guidelines

Read the following instructions carefully before you start the assignment.
If you do not understand any of them, ask your lecturer.

- This is a **HOME** Assignment to be completed by the **DEADLINE SPECIFIED BY LECTURER ON VLE**.
- The assignment consists of **2 Sections and CARRIES 61marks**; all tasks must be attempted.
- Please note that **ALL WORK** must be handed in by the stipulated deadlines.
LATE ASSIGNMENTS WILL NOT BE ACCEPTED.
- The assignment sheet and assignment coversheet should be fully completed with all the necessary details. Note that **assignments handed in without the assignment cover sheet are considered as not submitted.**
- Assignments **must be handed in as a soft copy uploaded on Moodle** by the stipulated deadline.
- Any **references should be listed and quotes should be paraphrased properly**. Unless listed and paraphrased properly the assignment will be regarded as plagiarized. **Referencing should be carried out using IEEE Style** Referencing Notation.
- **Copying is strictly prohibited and will be penalized** in line with the College's disciplinary procedures.