

<div class="printBefore">
<h1 class="pageTitle">COMP2003J Data Struc and Algorithms 2</h1>
<h2>Academic Year 2018/2019</h2>

This module extends the set of standard algorithms addressed in Data Structures and Algorithms I. It covers tree structures, linked structures (graphs), text processing and representation, as well as the core algorithms that complement each structure. A range of implementation techniques are examined, with emphasis being given to the complexity of the various solutions and their applicability to different problem domains.

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<div style="text-align:center;"><p>Curricular information is subject to change</p></div>

What will I learn?

Learning Outcomes:
<p>On completion of this module, students will be able to:
- Implement tree data structures and use them in programs.
- Explain how tree balance affects the efficiency of various binary search tree operations.
- Show how different approaches to tree balancing affect the tree structure.
- Describe the heap property and the use of heaps as an implementation of priority queues.
- Solve problems using graph algorithms, including depth-first and breadth-first search, shortest paths, and minimum spanning trees.
- Discuss and contrast how the the runtime and memory efficiency an abstract data type is affected by the choice of implementation strategy.
- Implement simple search algorithms and explain the differences in their time complexities.
- Explain how multiple data structures can be used in concert to solve problems.</p>

How will I learn?

Student Effort Hours:

Student Effort Type	Hours
Lectures	30
Laboratories	24
Autonomous Student Learning	71
Total	125

Am I eligible to take this module?

<div class="subHeadCB">Requirements, Exclusions and Recommendations</div>

<p>Not applicable to this module.</p>

<div class="subHeadCB">Module Requisites and Incompatibles</div>

How will I be assessed?

Description	% of Final Grade	Timing
Examination: < Description >	80	2 hour End of Trimester Exam
Continuous Assessment: < Description >	20	Varies over the Trimester

What happens if I fail?

<p><u>Compensation</u></p>
<p>This module is not passable by compensation</p>
<p><u>Resit Opportunities</u></p>

End of Semester Exam

Remediation

If you fail this module you may repeat, resit or substitute where permissible.

Reading List

<div class="pageBreak"><nav class="white-box no-left-arrow zero-top-margin">
<h1 class="printOnly"> UCD Course Search
Data Struc and Algorithms 2 (COMP2003J) </h1><h3 class="printOnly">Academic Year 2018/2019</h3><p class="printOnly">The information
contained in this document is, to the best of our knowledge, true and accurate at the time of publication, and is solely for informational purposes.
University College Dublin accepts no liability for any loss or damage howsoever arising as a result of use or reliance on this information.</p>
<h4 class="noPrint">Data Struc and Algorithms 2 (COMP2003J)</h4>
<dl>
<dt>Subject:</dt>
<dd>Computer Science</dd>
<dt>College:</dt>
<dd>Science</dd>
<dt>School:</dt>
<dd>Computer Science</dd>
<dt>Level:</dt>
<dd>2 (Intermediate)</dd>
<dt>Credits:</dt>
<dd>5.0</dd>

<dt>Semester:</dt>
<dd>Semester Two</dd>
<dt>Module Coordinator:</dt>
<dd>Dr Takfarinas Saber</dd>
<dt>Mode of Delivery:</dt>
<dd>N/A</dd>

<dt>How will I be graded?</dt>
<dd>40% </dd>

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<div class="noPrint" style="text-align:center; margin-top:10px;"><button class="menubutton" onclick="window.print()"><i class="fa fa-print fa-fw"> Print
Page</button>
(Google Chrome is recommended when printing
this page)</div>

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