

<b>Faculty</b>	Natural Sciences		
<b>Home Department</b>	Computer Science		
<b>Module Topic</b>	Algorithms and Data structures		
<b>Generic Module Name</b>	Computer Science 211		
<b>Alpha-numeric Code</b>	<b>CSC211</b>		
<b>NQF Level</b>	6		
<b>NQF Credit Value</b>	20		
<b>Duration</b>	Semester		
<b>Proposed semester to be offered</b>	First Semester		
<b>Programmes in which the module will be offered</b>	BSc (Computer Science) (3221,3023); BSc (Mathematical & Statistical Sciences) (3227); BSc (Physical Science) (3233,3120)		
<b>Year level</b>	2		
<b>Main Outcomes</b>	<p>On completion of this module students should be able to:</p> <ul style="list-style-type: none"> <li>• Can implement many algorithms that run correctly on computing machinery.</li> <li>• Can derive and explain the time and space complexity of algorithms.</li> <li>• Is able to tackle software problems from a procedural, object-oriented approach.</li> <li>• Construct models and produce working products from tools that the student has produced ab initio.</li> </ul>		
<b>Main Content</b>	<ul style="list-style-type: none"> <li>• Data structures.</li> <li>• Implementation of algorithms for manipulation.</li> <li>• The time and space complexity of the algorithms.</li> <li>• Efficiency of algorithms.</li> <li>• Correctness of algorithms by induction proofs.</li> <li>• Loop invariants.</li> <li>• Asymptotic bounds for algorithms.</li> </ul>		
<b>Pre-requisite modules</b>	COS101 and (COS114 or COS124)		
<b>Co-requisite modules</b>	None		
<b>Prohibited module Combination</b>	None		
<b>Breakdown of Learning Time</b>	<b>Hours</b>	<b>Timetable Requirement per week</b>	<b>Other teaching modes that does not require time-table</b>
<i>Contact with lecturer / tutor:</i>	42	<i>Lectures p.w.</i>	3
<i>Assignments &amp; tasks:</i>	28	<i>Practicals p.w.</i>	6
<i>Practicals:</i>	84	<i>Tutorials p.w.</i>	1
<i>Tutorials:</i>	0		
<i>Tests &amp; Examinations:</i>	9		
<i>Selfstudy:</i>	37		
<i>Other:</i>	0		
<b>Total Learning Time</b>	<b>200</b>		
<b>Methods of Student Assessment</b>	Continuous Assessment (CA): 50% Final Assessment (FA): 50%		
<b>Assessment Module type</b>	Continuous and Final Assessment (CFA)		