

STRU: Discrete Structures

Module Title:			Discrete Structures				
Language of Instruction:		n:	English				
Credits:		5					
NFQ Level:		6					
Module Delivered In			3 programme(s)				
Teaching & Learning Strategies:			As well as traditional lectures students will undertake in-class exercises on material presented in class. Small group tutorials will encourage further problem solving and discussion.				
Module Aim:			To develop the language of computational structures and to outline a range of algorithms.				
Learning Ou	Learning Outcomes						
On successful completion of this module the learner should be able to:							
LO1	outline a range of algorithms for the basic data structures in the areas of graph theory and analyse computer networks using the mathematics of discrete graphs;						
LO2	formulate problems using propositional logic and give examples of standard techniques of proof;						
Pre-requisit	e learning						
<i>Module Recommendations</i> This is prior learning (or a practical skill) that is recommended before enrolment in this module.							
No recommendations listed							
Incompatible Modules These are modules which have learning outcomes that are too similar to the learning outcomes of this module.							
No incompatible modules listed							
Co-requisite Modules							
No Co-requisite modules listed							
Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.							
1st Year Mathematics							



STRU: Discrete Structures

Indicative Content									
Basic Graph Theory Understand and use definitions and examples of walks, paths, cycles, circuits etc, Understanding and working with simple graphs. graphical representation graphs and spanning trees, Identifying bi-partite graphs Applying graph theory algorithms to un-directed weighted graphs. Using Kruscal's algorithm.									
Mathematical Logic Reviewing truth tables, propositional logic, valid Inferences. Understanding and using methods of proof. Using CNF and the resolution principle for valid statements Understanding formal proofs and proving compound statements.									
Assessment Breakdown %									
Continuous Assessment						50.00%			
End of Module Formal Examination						50.00%			
						_			
Continuous Assessment									
Assessment Type	Assessm	nent Description		Outcome addressed			% of total	Assessment Date	
Examination	CA mark	s will be based on the results of in class writte	en test	1			50.00	n/a	
No Project									
No Practical									
End of Module For	mal Exami	nation							
Assessment Type		Assessment Description	Outcome addressed		% of total	Assessment Date			
Formal Exam		Final Exam written paper	2		50.00	End-of-Semester			

SETU Carlow Campus reserves the right to alter the nature and timings of assessment



STRU: Discrete Structures

Module Workload Workload: Full Time Average Weekly Learner Workload Workload Type Frequency 12 Weeks per Stage 4.00 Lecture 15 Weeks per Stage Estimated Learner Hours 6.00 12 Weeks per Stage 1.00 Tutorial **Total Hours** 150.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_KCSOF_B	Bachelor of Science (Honours) in Software Development	4	Mandatory
CW_KCSOF_D	Bachelor of Science in Software Development	4	Mandatory
CW_KCCOM_C	Higher Certificate in Science in Computing Programming	4	Mandatory