12SDD 2020 | Stage 6 | 2020

Term 1 - 9 weeks 3 days

Week1	Week2	Week3	Week4	Week5	Week6	Week7	Week8	Week9	Week 10 (Only 3 days)
Algorithms and Coding							Database project		
Students will develop skills in algorithm description using pseudocode and flow charts and coding skills using python. Students will write algorithms and code covering all the control structures, standard algorithms, advanced data structures and searching and sorting algorithms described in the Course Specifications.							Students will use a structured approach and the procedural (imperitive+modular) paradigm to develop a database solution in python. Scenario: A music streaming company has hired you to develop a database for storing their music catalogue and client playlists. The data stored should be stored as a json. This is a group project and students should use pair programming.		

Term 2 - 10 weeks 2 days

Week1	Week2	Week3	Week4	Week5	Week6	Week7	Week8	Week9	Week10	Week 11 (Only 2 days)
Database project					Consultant Scenario					
Students will use a structured approach and the procedural (imperitive+modular) paradigm to develop a database solution in python. Scenario: A music streaming company has hired you to develop a database for storing their music catalogue and client playlists. The data stored should be stored as a json. This is a group project and students should use pair programming.					Sudents will prepare a consultant report for a new IT system based on a client scenario Students: ▪ evaluate different off-the-shelf cyber security products and produce a short list of 2 products indicating why those products would be most appropriate for their business ▪ evaluate suitable development approaches *for each element* of the new IT system ▪ evaluate different languages which would be suitable for the development *of each element* of the new IT system ▪ evaluate legal, social and ethical issues that may arise as a result of implementing the new IT system ▪ recommend the composition of the team needed to develop the new system.					

Term 3 - 9 weeks 4 days

Week1	Week2	Week3	Week4	Week5	Week6	Week7	Week8	Week9	Week 10 (Only 4 days)
Game Project								New Language Project	
Students will develop an individual software solution using the Agile approach and the Object Oriented paradigm, based on a client-developer scenario: The Software solution will comprise: ▪ A working program and associated code which *demonstrates a modular approach* ▪ An project brief for the client ▪ A user manual including: ▪ Evidence of project planning and version management (in GitHub) ▪ Intrinsic documentation ▪ Project documentation								Students work in groups create their own executable language, based on the pseudocode in the Course Specifications. They will then write a simple executable program do demonstrate their language.	

Term 4 - 9 weeks 4 days

Week1	Week2	Week3	Week4	Week5	Week6	Week7	Week8	Week9	Week 10 (Only 4 days)
New Language Project		Logic project				Revision			
Students work in groups create their own executable language, based on the pseudocode in the Course Specifications. They will then write a simple executable program do demonstrate their language.		Students will create a simple puzzle based 'game' using prolog.							