

St John's Senior School



Subject: Computer Science
Teacher: Mr. Zampekos

Form: Upper 6th
Term: Autumn

WEEK	WEEK BEGINNING	TOPIC
1	7 th September	Algorithms and programs: Revision (Application of concepts, operations and data constructs to complete programs.) -Coursework-
2	14 th September	Algorithms and programs: Application of concepts, operations and data constructs to complete programs and develop the confidence to experiment -Coursework-
3	21 st September	Organisation and structure of data: File organisation: Distinguish between master and transaction files. Describe sequential, indexed sequential and direct (random) file access. Distinguish between the use of serial and sequential file access methods in computer applications. Describe and design algorithms and programs for sequential file access and update. Explain the purpose of, and be able to use, a hashing algorithm. -Coursework-
4	28 th September	Organisation and structure of data: File organisation: Compare different hashing algorithms. Explain the use of multi-level indexes. Explain the techniques used to manage overflow and the need for file re-organisation. Explain the need for file security, including file backup, generations of files and transaction logs. Describe the need for archiving files. -Coursework-
5	5 th October	MINI - TEST
6	12 th October	Data security and integrity processes: Cryptography: Describe the need for and the purpose of cryptography. Describe techniques of cryptography and their role in protecting data. Follow algorithms and programs used in cryptography. Compare cryptographic methods and their relative strength. -Coursework-
7	19 th October	Algorithms and programs: Explain the use of recursion in algorithms and programs and consider the potential elegance of this approach. -Coursework-

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WEEK	WEEK BEGINNING	TOPIC
HALF TERM		
8	2 nd November	Algorithms and programs: Searching: Explain and apply a shortest-path algorithm. Describe appropriate circumstances for the use of each searching technique. -Coursework-
9	9 th November	Big O notation. Use Big O notation to determine the efficiency of different sorting algorithms in terms of their time and space requirements and to compare the efficiency of different sorting algorithms. Use Big O notation to determine the efficiency of linear and binary searches in terms of execution time and space requirements and to compare the efficiency of different searching algorithms. -Coursework-
10	16 th November	Revision -Coursework-
11	23 rd November	Revision -Coursework-
12	30 th November	Revision -Coursework-
13	7 th December	Revision -Coursework-

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Term: Spring

WEEK	WEEK BEGINNING	TOPIC
1	4th January	MOCK EXAMS
2	11 th January	Revision -Coursework-
3	18 th January	Revision -Coursework-
4	25 th January	Revision -Coursework-
5	1 st February	Revision -Coursework-
6	8 th February	Revision -Coursework-
HALF TERM		
7	22 nd February	Revision -Coursework-
8	1 st March	Revision -Coursework-
9	8 th March	Revision -Coursework-
10	15 th March	Revision -Coursework-
11	22 nd March	Revision -Coursework-

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WEEK	WEEK BEGINNING	TOPIC
1	19 th April	Revision -Coursework-
2	26 th April	Revision -Coursework-
3	3 rd May	Study leave
4	10 th May	Study leave
5	17 th May	EXAMS
6	24 th May	EXAMS
HALF TERM		
7	7 th June	EXAMS
8	14 th June	EXAMS
9	21 st June	EXAMS
10	28 th June	EXAMS
11	5 th July	-