basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

2021 National Annual Teaching Plan: Grade 11 – Term 1: Information Technology (IT)

Term 1 45 days	Week 1 27-29 Jan (3)	Week 2 1-5 Feb	Week 3 8-12 Feb	Week 4 15-19 Feb	Week 5 22-26 Feb	Week 6 1-5 Mar	Week 7 8-12 Mar	Week 8 15-19 Mar	Week 9 23-26 Mar (4)	Week 10 29-31 Mar(3)
CAPS Topic	**Hardware**	**Software**	**LOOP**	**LOOP**	**Networks**	**LOOPS**	**String Manipulation**	**String Manipulation**	**Comp Manage + Social Imp**	**Methods**
Core Concepts, Skills and Values	• Extend hardware concepts: • Motherboard and its Components Flow/ transfer of data between components • Expansion cards • Modular design • Cache memory and caching • Memory • Computer performance	• Types of OS's: cost/size/ hardware/platform • Programming language compilers • Multi-tasking/multi-threading/multi-processing • Virtual memory (Role + purpose • Virtualisation – overview	For Loops pre-conditional	Post-conditional (while, repeat until)	Overview of physical aspects of a network • Communication (Wi-Fi, WiMAX, 5G, LTE) • Data transmission • Overview of network innovation (role and purpose) •	• Nested loops: • Simple problems • '*' drawings, • multiplication tables etc. • Tracing through the algorithms, • aspects of initialisation at various points in the structure. Combination of loops and decision making	• String manipulation using string methods: • Position/copy/delete/ insert • Inserting/deleting characters • Reinforce decision making and Loops	• Determine position of a character • Find a character/ substring • Determine the length of a string • Reinforce decision making and Loops	Safeguarding against threats: Safety and security Threats: Physical access/Theft/Portable media Hardware failure: Storage/Power Network vulnerability: - Virus, worm, Trojan, rootkit, spoofing, phishing" Remedies: Backup/UPS/passwords/ rights/ firewalls/anti-virus, validation Social issues – applicable to term 2 content Effects of digitalisation	Auxiliary methods to perform simple string manipulation in the form class • Date and time objects • Changing the date and time • Formatting date and time • Date calculation Date methods: time to string, date to string, test for leap year
Requisite Pre-Knowledge	Grade 10 theory and programming skills acquired									
Resources (not textbook) **to enhance learning**	YouTube videos / Mr Long – channel / DBE textbook / Workshop material / Study guides / PowerPoints									
Informal Assessment		1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks		
SBA Formal assessment						**Task 1: THEORY TEST: >= 45 marks (1hr)**			**Task 2: PRACTICAL TEST >= 45 marks (1hr)**	

2021 National Annual Teaching Plan: Grade 11 – Term 2: Information Technology (IT)

TERM 2: 51 days	Week 1: 13-16 Apr (4)	Week 2: 19-23 Apr	Week 3: 28-30 Apr (3)	Week 4: 03–07 May	Week 5: 10-14 May	Week 6: 17-21 May	Week 7: 24-28 May	Week 8: 31 May–4 Jun	Week 9: 07–11 Jun	Week 10: 14–18 Jun (4)	Week 11: 21–25 Jun
CAPS topic	**Electronic Communication**	**Methods + Text files**	**Text files**	**Database Design**	**Database Design**	**Database Design**	**Social imp + Database Management**	**Arrays**	**Arrays**	**Arrays**	**Database Design + PAT**
Concepts, skills and values	• Mobile/ wireless / e-communication • Use of Mobile technology • Use of Wireless technologies E-communication: • Protocols • Data security • E-communication Devices	• Consolidate methods term 1 • Text Files: Input and output • Text file procedures • Reading from a text file • Utilise exceptions - catch errors on input and output	• Generate Text-based reports • Algorithms and trace tables • Adding to a text file Reinforce Loops	• Relationship – data/ information/ knowledge/ decision making. • Accessing and manipulating data • Characteristics of quality data • Qualities of valuable information • Grouping data and maintain data • Create a simple database without relationships	• Create simple database: Table design NO relations • Primary key and foreign key • Simple entity relations diagrams (ERD)	• Normalisation (concept only) • Design and create relational database • Set up relationships between tables • Characteristics of a good database • Problems with databases	• Describe + Examples DBMS • Database types – size and accessibility • Overview of database-related careers and roles of people involved Social issues applicable to term 2 content • Discuss the effect of Computer and human error: • Discuss the effect of cybercrime	Arrays as data structure - 1D • Structure: Step through items • Basic operations e.g. sum; average; minimum; maximum; aggregate	Arrays as data structure – 1D • Searching (linear search and/or binary search algorithm)	Arrays as data structure – 1D • Sorting an array (discus both sorting methods, only use one to for teaching practical)	What is software development? Planning and implementing a solution Start with Process, sort, query (generating information from a database) Start PAT
Requisite pre-knowledge	Grade 10 theory and programming skills acquired + Term 1 theory and programming skills acquired										
Resources (Not textbook) **to enhance learning**	YouTube videos / Mr Long – channel / DBE textbook / Workshop material / Study guides / PowerPoints										
Informal assess; remediation	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks		1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks
SBA (Formal Assessment							**Task 3: PRACTICAL TEST: >= 45 marks (1hr)**				

2021 National Annual Teaching Plan: Grade 11 – Term 3: Information Technology (IT)

TERM 3: 52 days	**Week 1:** 13-16 Jul (4)	**Week 2:** 19-23 Jul	**Week 3:** 26-30 Jul	**Week 4:** 02–06 Aug	**Week 5:** 10-13 Aug (4)	**Week 6:** 16-20 Aug	**Week 7:** 23-27 Aug	**Week 8:** 30 Aug–03 Sep	**Week 9** 6-10 Sep	**Week 10** 13-17 Sep	**Week 11** 20-23 Sep (4)
CAPS topic	**Arrays**	**Database Design + PAT**	**Application Development**	**Software engineering + PAT**	**Application Development**	**Application Development PAT**	**Application Development PAT**	**Database Design**	**Database Design Concepts T2**	**Database Design**	**Database Application**
Concepts, skills and values	Arrays as data structure – 1D • Parallel arrays • Simple nested loops • Arrays with reinforcing Text Files	Query a database using a join on a maximum of two tables with multiple criteria	Extend to database programming: -Accessing a database through Delphi constructs Set up a connection to a database (1 table) -Develop a multi-form GUI incorporating controls	• What is software development? • Planning and implementing a solution • Design the interface and the solution • Code/implement • Test and debug the program • Document, implement and maintain the program • Planning techniques using any appropriate tools • Dynamic Instantiation of active and passive components (functions and procedures) – GUI design PAT	Design and develop solutions for specific problems that include computational thinking and applying software engineering skills − Apply generic algorithms as part of the solution − Incorporating database transactions managed by methods or events	• Navigate the records of a dataset • Modify individual fields and records • Manipulate a dataset object and records PAT Devise a specific algorithm where applicable to solve a problem utilising user-defined code constructs or built-in methods	Coding constructs in execution of DB Transactions • Access fields and records within a dataset with code constructs and methods • Navigate the records of a dataset • Modify individual fields and records • Manipulate a dataset object and records PAT	Design guidelines Design and create a relational database Explain and motivate relational database design Normalisation (overview and purpose) Programming to incorporate relational databases	Set up relationships between tables 1:M e.g. register class pupils Two tables showing master detail relationship with at least one foreign key in one table PAT	Design and develop solutions for specific problems Apply generic algorithms Incorporating database transactions managed by methods or events PAT Motivate the use of a specific algorithm − Validate the solution against a set of data using different techniques, e.g. trace tables, watches, manual output comparison	Create a query to extract information from a database using a relationship on a maximum of two tables with multiple criteria
Requisite pre-knowledge	Grade 10 theory and programming skills acquired + Term 1,2 theory and programming skills acquired										
Resources (Not textbook) **to enhance learning**	YouTube videos / Mr Long – channel / DBE textbook / Workshop material / Study guides / PowerPoints										
Informal assess; remediation	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks		1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks		
SBA (Formal Assessment					**Task 4: Open book theory test / Case study / Integrated test >= 45 marks (1hr)**	**PAT**	**PAT**	**PAT**	**PAT**	**Task 5: PRACTICAL TEST >= 45 marks (1hr)**	

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2021 National Annual Teaching Plan: Grade 11 – Term 4: Information Technology (IT)

TERM 4: 47 days	**Week 1:** 05-08 Oct (3)	**Week 2:** 11-15 Oct	**Week 3:** 18-22 Oct	**Week 4:** 25-29 Oct	**Week 7 - 10** 1 Nov – 8 Dec Exams
CAPS topic	**Internet and WWW**	**Internet Services**	**Social Implications + PAT**	**Revision + PAT**	**Final Examination**
Concepts, skills and values	Overview of the evolution of the Internet in terms of: • Software and applications (definition) • Internet of Things (IoT) • Big data concepts • Overview of multimedia as part of Internet technologies • Media	• Overview of Internet services technologies • Types of websites (what they offer) • Overview of supporting technologies: • Security services (purpose, advantages and limitations) • Internet related careers	• Social issues applicable to term 4 content • Discuss the social implications of big data. Describe the influences of globalisation and fourth industrial revolution (4IR) PAT	Content using Case Studies - All Topics PAT	
Requisite pre-knowledge	Grade 10 theory and programming skills acquired + Term 1,2,3 theory and programming skills acquired				
Resources (Not textbook) **to enhance learning**	YouTube videos / Mr Long – channel / DBE textbook / Workshop material / Study guides / PowerPoints				
Informal assess; remediation	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	
SBA (Formal Assessment	**PAT**	**PAT**	**PAT**	**PAT**	

PAPER 1	PAPER 2
Marks: 150 – Time: 3 hours	**Marks: 150–Time: 3 hours**
Question 1: Basic, general programming skills: Arrays, nested loops, built-in functions **Question 2:** Functions and procedures, File handling **Question 3:** Database **Question 4:** General problem-solving	**Section A: Question 1** *Short questions (±20 marks)* **Section B: Question 2** *Systems Technologies (±25 marks)* **Section C: Question 3** *Communications and Network Technologies (±25 marks)* **Section D: Question 4** *Data and Information Management (±25 marks)* **Section E: Question 5** *Solution Development (±25 marks)* **Section F: Question 6** *Integrated Scenario (±30 marks)*

Cognitive levels:
Lower order – 30%; Middle order-40%; Higher order-30%