2021 RECOVERY CURRICULUM AND ASSESSMENT PLANS

INFORMATION TECHNOLOGY (IT)
GRADE 11

Implementation: January 2021

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Presentation Outline

Purpose

Amendments to the Annual Teaching Plan (ATP)

Amendments to School Based Assessment (SBA)

Conclusion

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Purpose

- To mediate the amendments of the recovery 2021 Annual Teaching Plan (ATP) including School Based Assessment (SBA) for **Information Technology Grade 11** for implementation in January 2021.

- To ensure that **meaningful teaching proceeds** during 2021 as per the 2021 school calendar.

- To assist teachers with **guided pacing and sequencing** of curriculum content and assessment.

INFORMATION TECHNOLOGY

National Curriculum Statement (NCS)

Curriculum and Assessment Policy Statement

CAPS
STRUCTURED. CLEAR. PRACTICAL
HELPING TEACHERS UNLOCK THE POWER OF NCS

Further Education and Training Phase
Grades 10-12

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Purpose (continued)

To enable teachers to **cover the essential core content /skills** in each grade within the available time.

To assist teachers with **planning** for the different forms of **assessment**.

To ensure learners are **adequately prepared** for the **subsequent year/s** in terms of content, skills, knowledge, attitudes and values

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"
The 3-year Curriculum Recovery Guideline outlines the development of the 3-year recovery ATPs to manage learning losses. **Recovery ATPs** **as stipulated in Circular S13 of 2020**.
"

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Introduction

COVID-19 led to losses in teaching and learning time due to:
- the lockdown period and **phased reopening** of schools,
- Alternating time tabling models and
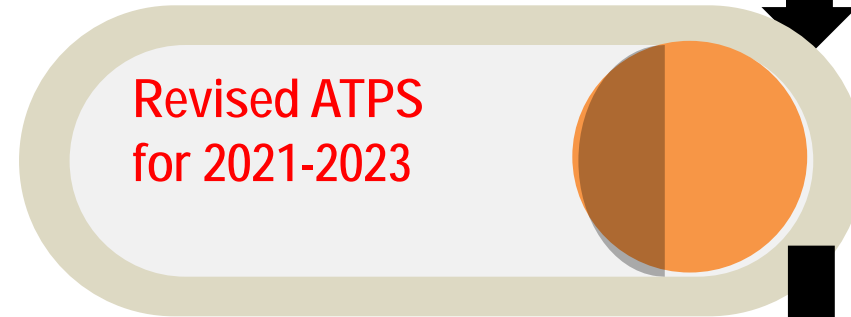- the related health and safety **protocols.**

Furthermore, the revision of the school calendar **and** intermittent closure of many schools negatively **impacted** the **ability of teachers to implement the revised 2020 ATPs** as envisioned.

To mediate the impact and support teachers in managing teaching, assessment and learning within the reduced **time**, the DBE in 2020 implemented:
- **Circular S3 that outlined and guided teachers to conduct context specific subject trimming**, in consultation with subject advisors.
- **National Assessment Circular 02** and **Circular E 11** to guide school-based assessment in phases and subjects

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Vision 2024

Learning Losses
3-year Recovery Plan:

Revised ATPS
for 2021-2023

Curriculum
Modernisation
Implemented in 2024

- Conceptualisation of a Curriculum Strengthening process that encompasses Competencies required for the Changing World;

- Develop Revised Modernised Curriculum Policy Statements in alignment with amended CAPS Section 4 and 2020 Assessment Circulars;

- Develop an Assessment for Learning pedagogical strategy, and

- Develop Educator Mediation Programmes.

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Principles

1 — Use of the **2020 Curriculum Recovery Framework** as the **base document**

2 — Learning losses inform the **Three Year Recovery Plans for School –based Assessment**

3 — **Management of the learning losses and the School Based Recovery Plans**

4 — Create opportunities through adjusted ATPs to strengthen **pre-knowledge, consolidation, revision, and deeper learning**

5 — Entrench **Assessment for Learning** as a **Pedagogical Approach** to address the learning losses

Principles

6 — The 2021 Recovery ATPs maintains the use of current LTSM and resources already available in the system.

7 — Content topics removed in 2020 were not automatically returned in the 2021 Recovery ATPs.

8 — Fundamental and core topics were retained in the Recovery ATPs

9 — To guide and support effective teaching and learning

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Underpinning Assumptions

ASSUMPTION 1
All learners will return to school from day 1 of the 2021 academic year and norm-times as stipulated in the CAPS will be adhered to for the entire school year;

ASSUMPTION 2
Learning losses due to COVID-19 across grades and subjects will vary from school to school, class to class and even within classes.

ASSUMPTION 3
Each Teacher will have a record of learning losses and Departmental Heads and Subject Advisors will monitor progress in learning loss recovery;

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Underpinning Assumptions

ASSUMPTION 4

All schools will develop & implement school-based support programmes for all grades/years with particular **focus on all the exit grades/years (3, 6, 9 and 12) throughout the three-year period.**

ASSUMPTION 5

All Circulars related to the 2020 ATPs including SBA to be withdrawn and revised to align to the 2021 ATPs.

ASSUMPTION 6

Schools have systems in place to manage the possibility of a second wave of the pandemic in Q1 and Q3 of the 2021

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The Development of the 2021 Recovery ATPs

The Recovery ATPs are aligned to the:
- 2021 School calendar
- Abridged S4 of CAPS
- Curriculum and assessment principles as prescribed in the CAPS policy for IT.

Reorganisation of Content Topics

Theory

Content clustered for accelerated teaching and learner-directed learning. Supported by formative assessment througy PowerPoint presentations, videos, Q&As, quizzes

Practical

Methods (functions and procedures) moved to Grade 12

Other practical content repackaged for new time frames

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Term 1

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									

Term 2

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										

Term 3

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										

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Term 4

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	**PAPER 1** 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	**PAPER 2** Marks: 150–Time: 3 hours 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)*
Requisite pre-knowledge	Grade 10 theory and programming skills acquired + Term 1,2,3 theory and programming skills acquired					Section E: Question 5 *Solution Development (±25 marks)*
Resources (Not textbook) to enhance learning	YouTube videos / Mr Long – channel / DBE textbook / Workshop material / Study guides / PowerPoints					Section F: Question 6 *Integrated Scenario (±30 marks)*
Informal assess; remediation	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	1 informal assessment tasks	Cognitive levels: Lower order – 30%; Middle order-40%; Higher order-30%	

Overview of Assessment Changes

School-based Assessment (SBA)

No June Examination

June Examination replaced by controlled test.

Revised Programme of Assessment

Terms	Term 1		Term 2	Term 3		Term 4	
Tasks	**Task 1**	**Task 2**	**Task 3**	**Task 4**	**Task 5**	**Task 6**	
Assessment	Theory Test	Practical Test	Practical Test	Open book test or Case Study or Integrated task	Practical Test	Final Practical Exam	Final Theory Exam
SBA Weighting	20%	20%	20%	20%	20%	50%	50%
Promotion weighting	Convert to 60%					Convert to 10%	Convert to 10%
Total Marks	Min: 45	Min: 45	Min: 45	Min: 45	Min: 45	150	150
Time Allocation	Minimum: 60 min	Minimum: 60 min	Minimum: 60 min	Minimum: 60 min	Minimum: 60 min	3 hours	3 hours
				Promotion weighting of PAT: 20%			

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Revision of Examination Structure

Paper 1 (Practical) – Proposed layout

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

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Revision of Examination Structure

Paper 2 – Theory – Proposed layout

Marks: 150 – Time: 3 hours

Question 1: *Short questions (±20 marks)*

Question 2: *Systems Technologies (±25 marks)*

Question 3: *Communications and Network Technologies (±25 marks)*

Question 4: *Data and Information Management (±25 marks)*

Question 5: *Solution Development (±25 marks)*

Question 6: *Integrated Scenario (±30 marks)*

Conclusion

- The theory content is clustered and compressed for accelerated learning.
  - Follow a learner-directed learning approach supported by presentations, videos, questions and quizzes
  - Time gained is used for teaching and practising practical content
- Changes to the practical components
  - Moved methods to Grade 12

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