

## 2023/24 ANNUAL TEACHING PLANS: INFORMATION TECHNOLOGY: GRADE 11 (TERM 1)

TERM 1	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
<b>CAPS TOPIC</b>	Solution development	Systems technologies	Systems technologies	Solution development	Solution development	Solution development	Networks	Solution development	Solution development	Computer management social implications	Solution development
<b>CORE CONCEPTS, SKILLS AND VALUES</b>	<ul style="list-style-type: none"> <li>User accounts</li> <li>Logging in</li> <li>File management</li> <li>Revision: Using problem solving steps, tools, techniques from grade 10</li> </ul>	<ul style="list-style-type: none"> <li>Describe the motherboard</li> <li>Purpose and role of the motherboard</li> <li>Components as part of the motherboard</li> <li>Purpose and role of the expansion cards</li> <li>Flow, transfer of data between components</li> <li>Purpose and role of cache memory and caching</li> <li>Memory as part of a computer system</li> <li>Computer performance</li> </ul>	Types of OS's: cost, size, hardware, platform <ul style="list-style-type: none"> <li>Programming language compilers, interpreters</li> <li>Overview of processing techniques</li> <li>Virtual memory (role + purpose)</li> <li>Overview of virtualisation</li> </ul>	Revision grade 10 loops <ul style="list-style-type: none"> <li>Nested loops (structure + algorithms)</li> </ul>	Arrays <ul style="list-style-type: none"> <li>Explain the concept of a 1-dimensional array</li> <li>Arrays as a data structure (1D)</li> <li>Loop through items</li> <li>Basic mathematical operations in an array</li> </ul>	Algorithms <ul style="list-style-type: none"> <li>Search using the linear and binary search algorithm</li> <li>Sorting an array (bubble and selection sort)</li> </ul>	Overview of physical aspects of a network <ul style="list-style-type: none"> <li>Communication (Wi-Fi, WiMAX, 5G, LTE)</li> <li>Data transmission</li> </ul> Overview of network innovation (role and purpose) <ul style="list-style-type: none"> <li>Voice over Internet Protocol (VoIP)</li> <li>Internet vs intranet vs extranet</li> <li>Virtual Private Networks (VPN)</li> <li>Location-based computing</li> </ul>	Parallel arrays	String manipulation using string methods: <ul style="list-style-type: none"> <li>Inserting and deleting characters</li> <li>Determine the position of a character</li> <li>Find a character, substring</li> <li>Determine the length of a string</li> </ul>	Safeguarding against threats: <ul style="list-style-type: none"> <li>Safety and security</li> <li>Threats: Physical, hardware, network</li> <li>Remedies</li> </ul> Social issues – applicable to term 1 content <ul style="list-style-type: none"> <li>The social implications of location-based computing</li> <li>Ethical and legal issues of network use policies and practices</li> <li>Capabilities and limitations of ICTs</li> </ul>	Date and time objects <ul style="list-style-type: none"> <li>Changing the date and time</li> <li>Formatting date and time</li> <li>Date calculations</li> <li>Date methods: Time to string, date to string, test for leap year</li> </ul>
<b>DATE COMPLETED [COMPLETED BY TEACHER]</b>											
<b>TERM COVERAGE %</b>	5%	10% (15%)	10% (25%)	10% (35%)	10% (45%)	10% (55%)	10% (65%)	10% (75%)	10% (85%)	10% (95%)	5% (100%)
<b>YEAR COVERAGE %</b>	2%	5%	7%	10%	13%	16%	19%	22%	24%	27%	29%
<b>REQUISITE PRE-KNOWLEDGE</b>			Grade 10 theory and programming knowledge and skills								
<b>INFORMAL ASSESSMENT AND REMEDIATION</b>		1 informal assessment task	1 informal assessment task	1 informal assessment task	1 informal assessment task	1 informal assessment task	1 informal assessment task	1 informal assessment task			
<b>SBA FORMAL ASSESSMENT</b>						<b>Task 1: THEORY TEST: Min. 45 marks (1hr)</b>			<b>Task 2: PRACTICAL TEST Min. 45 marks (1hr)</b>		

2023/24 ANNUAL TEACHING PLANS: INFORMATION TECHNOLOGY: GRADE 11 (TERM 2)

TERM 2	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
<b>CAPS TOPIC</b>	Electronic communication	Solution development	Solution development	Solution development	Software engineering principles PAT	Data & information management	Data & information management	Data & information management PAT	Solution development PAT	Social implications PAT	Solution development PAT
<b>CONCEPTS, SKILLS AND VALUES</b>	<ul style="list-style-type: none"> <li>- Mobile, wireless, e-communication</li> <li>- Use of mobile technology</li> <li>- Use of wireless technologies</li> <li>- Protocols</li> <li>- Data security</li> </ul>	Introduction to text files <ul style="list-style-type: none"> <li>- What is a text file?</li> <li>- Physical file vs logical file name</li> <li>- Layout of data in a text file: end of line, end of file characters</li> <li>- Text file procedures to read and write.</li> </ul>	Reading from a text file <ul style="list-style-type: none"> <li>- Exception handling</li> <li>- Checking whether file exists</li> <li>- Reading one line at a time</li> <li>- Reading multiple lines</li> <li>- Displaying information from a text file</li> <li>- Use of string handling functions in application exercises</li> </ul>	Adding to a text file <ul style="list-style-type: none"> <li>- Write to a file using overwrite or append mode</li> <li>- Display the updated text file</li> <li>- Generating a text-based report, e.g. correctly formatted data</li> </ul>	What is software development? Planning and implementing a solution	<ul style="list-style-type: none"> <li>- Relationship between data, information, knowledge, and decision making</li> <li>- Characteristics of quality data:</li> <li>- Accessing and manipulating data</li> </ul>	<ul style="list-style-type: none"> <li>- Grouping data</li> <li>- Qualities of valuable information to build knowledge and make decisions</li> <li>- How to generate information</li> </ul>	<ul style="list-style-type: none"> <li>- Describe database management software (DBMS)</li> <li>- Examples of DBMS software</li> <li>- Database types according to usage requirements – (size and accessibility)</li> <li>- Overview of database-related careers and roles of people involved</li> </ul>	Consolidate text files and user-defined methods	Social issues applicable to term 2 content <ul style="list-style-type: none"> <li>- Effects of digitalisation</li> <li>- How to protect your online identity</li> </ul>	User-defined methods with and without parameter passing Introduction to user-defined methods <ul style="list-style-type: none"> <li>- Purpose</li> <li>- Types (functions and procedures)</li> </ul> Differentiate between procedures and functions
					<b>PAT</b> Problem definition and research Task definition and user story acceptance test						
<b>DATE COMPLETED [COMPLETED BY TEACHER]</b>											
<b>TERM COVERAGE %</b>	6%	10% (16%)	6% (22%)	10% (32%)	10% (42%)	10% (52%)	10% (62%)	10% (72%)	10% (82%)	10% (92%)	8% (100)
<b>YEAR COVERAGE %</b>	31%	34%	35%	38%	40%	43%	46%	49%	52%	55%	57%
<b>REQUISITE PRE-KNOWLEDGE</b>	Grade 10 and Grade 11 Term 1 theory and programming knowledge and skills										
<b>INFORMAL ASSESSMENT AND REMEDIATION</b>	1 informal assessment task	1 informal assessment task	1 informal assessment task	1 informal assessment task	1 informal assessment task		1 informal assessment task	1 informal assessment task	1 informal assessment task	1 informal assessment task	1 informal assessment task
<b>SBA (FORMAL ASSESSMENT, PAT)</b>					PAT task 0 PAT task 1	PAT task 2	PAT task 2(Cont.)	PAT task 3	PAT Task 3 (cont.)	Task 3: Mid-year examination	

2023/24 ANNUAL TEACHING PLANS: INFORMATION TECHNOLOGY: GRADE 11 (TERM 3)

TERM 3	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
<b>CAPS TOPIC</b>	Solution development	Solution development PAT	Data and information management PAT	Social implications PAT	Solution development	Solution development	Solution development PAT	Solution development	Solution development	Solution development PAT	Solution development
<b>CONCEPTS, SKILLS AND VALUES</b>	<p>Review user-defined methods with and without parameter passing</p> <p>Procedures and functions</p> <ul style="list-style-type: none"> <li>- Structure, calling statement and method signature</li> <li>- Arguments vs parameters</li> </ul>	<p>Procedures and functions</p> <ul style="list-style-type: none"> <li>- Value parameters only</li> <li>- Using methods in problems</li> <li>- Basic input validation techniques</li> <li>- Input validation using code constructs</li> </ul> <p><b>PAT</b> IPO &amp; Data Validation</p>	<p>Create a simple database without relationships</p> <ul style="list-style-type: none"> <li>- Design the table(s)</li> <li>- Maintain data: insert, add, import, delete, edit</li> </ul> <p>Process, sort, query (generating information from a database)</p> <p><b>PAT</b> Create GUI application</p>	<p>Discuss the effect of computer and human error</p> <p>Discuss the effect of cybercrime</p> <p><b>PAT</b> Create GUI application(cont.)</p>	<p>Using good programming principles and algorithms</p> <ul style="list-style-type: none"> <li>- Accessing a database through programming language constructs</li> <li>- Set up a connection or connect to a database (single table) by providing path in code statements</li> <li>- Develop a multi-form, multi-screen GUI incorporating simple controls – consider functionality and usability</li> <li>- Use programming language constructs in the execution of various simple database transactions</li> </ul>	<p>Use programming language constructs in the execution of various simple database transactions</p> <ul style="list-style-type: none"> <li>- Access fields and records within a dataset with code constructs and applicable methods</li> <li>- Navigate the records of a dataset</li> <li>- Modify individual fields and records within a dataset with code constructs and applicable methods, and apply all changes</li> <li>- Manipulate a dataset object and records with code constructs and apply all changes</li> <li>- Reinforce concepts such as iteration and conditions</li> <li>- Reinforce methods as part of a solution</li> </ul>	<p>Reinforce methods as part of a solution</p> <ul style="list-style-type: none"> <li>- Apply simple parameter passing and return values using class methods as part of the form class</li> </ul> <p><b>PAT</b> Create DB and connect to Delphi</p>	<p>Design and develop solutions for specific problems</p> <ul style="list-style-type: none"> <li>- Apply generic algorithms as part of the solution</li> <li>- Incorporate database transactions managed by methods or events</li> <li>- Devise a specific algorithm where applicable to solve a problem utilising user-defined code constructs or built-in methods</li> <li>- Motivate the use of a specific algorithm</li> </ul>	<ul style="list-style-type: none"> <li>- Reinforce problem-solving steps</li> <li>- Reinforce software engineering principles</li> <li>- Set up relationships between tables</li> </ul>	<p>Create a query to extract information from a database using a relationship on a maximum of two tables with multiple criteria</p> <p><b>PAT</b> Create DB and connect to Delphi (cont.)</p> <p>Coding</p>	<p><b>PAT</b> Coding</p>
<b>DATE COMPLETED [COMPLETED BY TEACHER]</b>											
<b>TERM COVERAGE %</b>	7,7 %	9,6% (17,3%)	9,6% (26,9%)	7,7(34,6) %	9,6% (42,4%)	9,6% (53,8%)	9,6% (63,4%)	9,6% (73%)	9,6% (82,6%)	9,6% (92,2%)	7.7% (100%)
<b>YEAR COVERAGE %</b>	59%	62%	65%	67%	70%	73%	76%	78%	81%	84%	86 %
<b>REQUISITE PRE-KNOWLEDGE</b>	Grade 10 and Grade 11 Term 1 and Term 2 theory and programming knowledge and skills										

TERM 3	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
<b>INFORMAL ASSESS; REMEDIATION</b>	1 informal assessment task	1 informal assessment task	1 informal assessment task	1 informal assessment task		1 informal assessment task	1 informal assessment task	1 informal assessment task	1 informal assessment task		
<b>SBA (FORMAL ASSESSMENT)</b>	PAT task 4	PAT task 5	PAT task 6	PAT task 6 (cont.)	Task 4 alternative task Min. 45 marks (1hr)		PAT task 7		Task 5 PRACTICAL TEST Min. 45 marks (1hr)	PAT task 7 (cont.) PAT task 8	PAT task 8 (cont.)

## 2023/24 ANNUAL TEACHING PLANS: INFORMATION TECHNOLOGY: GRADE 11 (TERM 4)

TERM 4	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 7-10
<b>CAPS TOPIC</b>	Internet and www PAT	Internet services PAT	Social implications PAT	Revision + PAT PAT	Revision	Final examination
<b>CONCEPTS, SKILLS AND VALUES</b>	Overview of the evolution of the Internet in terms of: - Software and applications (definition) - 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)	Content using case studies - all topics	Content using case studies - all topics	
	<b>PAT</b> Coding	<b>PAT</b> Testing and data validation	<b>PAT</b> Documentation	<b>PAT</b> Finalisation		
<b>DATE COMPLETED [COMPLETED BY TEACHER]</b>						
<b>TERM COVERAGE %</b>	16,7%	20,8% (37,5%)	20,8% (58,3%)	20,8% (79,1%)	20,8% (100%)	
<b>YEAR COVERAGE %</b>	89%	91%	94%	97%	100%	
<b>REQUISITE PRE-KNOWLEDGE</b>	Grade 10 theory and programming skills acquired + Term 1,2,3 theory and programming skills acquired					
<b>INFORMAL ASSESS; REMEDIATION</b>	1 informal assessment task	1 informal assessment task	1 informal assessment task	1 informal assessment task	informal assessment tasks	informal assessment tasks
<b>SBA (FORMAL ASSESSMENT)</b>	<b>PAT task 8 (cont.)</b>	<b>PAT task 9</b>	<b>PAT task 10</b>	<b>PAT submission</b>		
<b>TEACHING TIME PER WEEK</b>	4 hours per week required • If contact time is lost a <b>recovery plan must be in place</b> • Your recovery plan and remediation plan must be reflected in your Subject Improvement Plan – update it throughout the year				<ul style="list-style-type: none"> <li>Indicate on the teaching plan (ATP) what has been completed to track your progress</li> <li>Application packages share common features (formatting, editing, page layout, illustrations, etc.) reinforced these when teaching different packages</li> <li>Use the guideline documents to complete PAT</li> </ul>	
<b>RESOURCES (OTHER THAN TEXTBOOK) TO ENHANCE LEARNING</b>	<b>Hardware</b> • Data projector • 1 learner per computer • Entry-level computers networked • Multifunction printer • Internet connectivity		<b>Software</b> • Windows 10 or later version • Delphi programming software (Version 10, 10.3, 10.4) • Office 2016 or later version (Word, Excel, Access, PowerPoint)		<b>Maintenance plan</b>	<b>General</b> • Slide presentations – summarised content • Notebook for summaries and activities • Online content, resources • Video clips • Posters with new concepts, formulas, functions • Previous question papers
<b>EXAMPLES OF FORMATIVE ASSESSMENTS, RETRIEVAL PRACTICE</b>	<ul style="list-style-type: none"> <li>Concept maps for summaries</li> <li>Brainstorm sessions</li> <li>Quizzes (Google Forms, MS Forms, Kahoots!, etc.) for retrieval practice</li> </ul>				<ul style="list-style-type: none"> <li>Competitions, gaming (fun activities)</li> <li>Peer-assessment</li> <li>Extended opportunities, activities, etc.</li> </ul>	
<b>IMPORTANT DOCUMENTS TO USE WITH THE ATP</b>	<ul style="list-style-type: none"> <li>Updated CAPS for IT</li> <li>Chapter 4 – latest assessment instructions</li> <li>Gr 12 exam guidelines with new concepts (new technologies where applicable)</li> </ul>					