



**Level 6 Advanced Diploma in Information  
Technology (104) 131 Credits**



<b>Unit:</b> Advanced Excel	<b>Guided Learning Hours:</b> 220
<b>Exam Paper No.:</b> 4	<b>Number of Credits:</b> 22
<b>Prerequisites:</b> Good knowledge of file management.	<b>Corequisites:</b> A pass or higher in Diploma in Information Technology or equivalence.
<p><b>Aim:</b> This unit introduce learners to the advanced features of Excel and prepare them for major topics which include: creation and manipulation of business-formatted worksheets and charts; using appropriate functions and formulas in Excel; creation of worksheets utilising data tables, hyperlinks, databases, templates, and consolidated capabilities; integration of graphics, Word, Access, and Excel data into appropriate business reports, etc.; using Visual Basic for Applications code to create procedures for specific worksheets; using advanced techniques to audit and validate data, solve problems using Excel's Solver, Scenario Manager, Pivot Table, Pivot Chart, and data Map utilities; importing and exporting data and collaborating on worksheets tracking data changes. Also included are working with multiple worksheets; creating formulas and formatting across sheets; consolidating data; formula auditing; advanced functions including <b>Round</b>, <b>If</b> and <b>VLookup</b>. On completion of this unit, learners will be able to: create and use templates, conditional formatting, data validation, protection, import / export, macros, including advanced printing options.</p>	
<b>Required Materials:</b> Recommended Learning Resources.	<b>Supplementary Materials:</b> Recommended textbooks and lecture notes.
<p><b>Special Requirements:</b> This is a hands-on unit, hence practical use of computers is essential. Requires intensive lab work outside of class time.</p>	
<p><b>Intended Learning Outcomes:</b></p> <p>1 How to design a workbook using Excel's sorting, filtering, grouping features, creating pivot tables and pivot charts, freezing rows and columns and using folders for workbook storage.</p> <p>2 How to use Advanced functions, conditional formatting, filtering, providing data validation, using the logical <i>IF</i> function and writing the index function.</p>	<p><b>Assessment Criteria:</b></p> <p>1.1 Analyse a structured range of data in Excel</p> <p>1.2 Describe how to freeze rows and columns</p> <p>1.3 Illustrate how to plan and create an Excel data table</p> <p>1.4 Describe how to rename and format an Excel data table</p> <p>1.5 Describe how to add, edit, and delete records in an Excel data table</p> <p>1.6 Describe how to sort data and Filter data</p> <p>1.7 Describe how to insert a Total row to summarise an Excel table</p> <p>1.10 Describe how to insert subtotals into a range of data</p> <p>1.11 Describe how to create and modify a PivotTable</p> <p>1.12 Describe how to apply PivotTable styles and formatting</p> <p>1.13 Describe how to filter and sort a PivotTable</p> <p>1.14 Describe Group PivotTable items</p> <p>1.15 Describe how to create a PivotChart</p> <p>1.16 Demonstrate using the Outline buttons to show or hide details</p> <p>2.1 Demonstrate how to evaluate a single condition using the IF function</p> <p>2.2 Demonstrate how to evaluate multiple conditions using the AND function</p> <p>2.3 Describe how to calculate different series</p>

	<p>of outcomes by nesting IF functions</p> <p>2.4 Illustrate testing whether one or more conditions are true with the OR function</p> <p>2.5 Describe how to return values from a table with the VLOOKUP function</p> <p>2.6 Describe how to check for duplicate values using conditional formatting</p> <p>2.7 Describe how to Check for data entry errors using the IFERROR function</p> <p>2.8 Demonstrate summarizing data using the COUNTIF, SUMIF, and AVERAGEIF functions</p> <p>2.9 Describe the COUNTIFS, SUMIFS, and AVERAGEIFS functions</p> <p>2.10 Illustrate how to use advanced filters</p> <p>2.11 Demonstrate summarising data using Database functions</p>
<p>3 Understand Excel Applications, how to protect a workbook, using the auditing toolbar, sharing a workbook with others and publishing workbooks to the web.</p>	<p>3.1 Describe how to create, edit, and delete defined names for cells and ranges</p> <p>3.2 Describe how to paste a list of defined names as documentation</p> <p>3.3 Describe how to use defined names in formulas</p> <p>3.4 Describe how to add defined names to existing formulas</p> <p>3.5 Describe how to create validation rules for data entry</p> <p>3.6 Describe how to protect the contents of worksheets and workbooks</p> <p>3.7 Describe how to add, edit, and delete comments</p> <p>3.8 Discuss about macro viruses and Excel security features</p> <p>3.9 Demonstrate creating a macro using the macro recorder</p> <p>3.10 Demonstrate editing a macro using the Visual Basic Editor</p> <p>3.11 Demonstrate assigning a macro to a keyboard shortcut and a button</p> <p>3.12 Describe how to save a workbook in macro enabled format</p>
<p>4 Financial analysis; analysing the costs given various estimated rates of interest and creating and use one-variable data tables, excel scenarios and scenario report.</p>	<p>4.1 Demonstrate working with financial functions to analyse loans and investments</p> <p>4.2 Describe how to create an amortisation schedule</p> <p>4.3 Describe how to calculate a conditional sum</p> <p>4.4 Describe how to interpolate and extrapolate a series of values</p> <p>4.5 Describe how to calculate a depreciation schedule</p> <p>4.6 Describe how to determine a payback period</p> <p>4.7 Describe how to calculate a net present value</p> <p>4.8 Describe how to calculate an internal rate of return</p>

<p>5 Understand how to use Excel's solver to unravel complex tasks and perform What-If Analysis.</p>	<p>4.9 Describe how to trace a formula error to its source</p> <p>5.1 Explain the principles of cost-volume-profit relationships</p> <p>5.2 Demonstrate how to perform a basic <i>what-if analysis</i></p> <p>5.3 Describe how to use Goal Seek to calculate a solution</p> <p>5.4 Describe how to create a one-variable data table</p> <p>5.5 Describe how to create a two-variable data table</p> <p>5.6 Describe how to create and apply different Excel scenarios</p> <p>5.7 Describe how to generate a scenario summary report</p> <p>5.8 Describe how to generate a scenario PivotTable report</p> <p>5.9 Explore the principles of price elasticity</p> <p>5.10 Describe how to run Solver to calculate optimal solutions</p> <p>5.11 Describe how to create and apply constraints to a Solver model</p> <p>5.12 Describe how to save and load a Solver model</p>
<p>6 Understand External data connection principles, how to import text files into Excel and copying a worksheet from one workbook to another.</p>	<p>6.1 Demonstrate importing data from a text file</p> <p>6.2 Demonstrate working with connections and external data ranges</p> <p>6.3 Define a trusted location</p> <p>6.4 Describe databases and queries</p> <p>6.5 Analyse how to use the Query Wizard to import data from a database table</p> <p>6.6 Describe how to Edit a query</p> <p>6.7 Describe how to import data into a PivotTable and PivotChart</p> <p>6.8 Describe how to create a Web query</p> <p>6.9 Describe how to retrieve data from the World Wide Web</p> <p>6.10 Describe how to use hyperlinks in a workbook</p> <p>6.11 Describe how to access data from an XML document</p> <p>6.12 Demonstrate working with XML data maps</p>
<p>7 Understand how to electronically edit data using track changes; protect workbook, conditional formatting and customising ribbons.</p>	<p>7.1 Be able to turn on Track changes</p> <p>7.2 Demonstrate listing changes on a separate worksheet</p> <p>7.3 Review changes and add comments</p> <p>7.4 Demonstrate using document inspector</p> <p>7.5 Demonstrate protecting a workbook</p> <p>7.6 Be able to automatically apply formatting</p> <p>7.7 Be able to customise ribbons</p>
<p>8 The importance of incorporating Excel with Visual Basic, the Visual Basic editor, how to</p>	<p>8.1 Describe how to create a macro using the macro recorder</p>

save macros and setting macro security levels.	8.2	Demonstrate working with the Project Explorer and Properties window of the VBA Editor
	8.3	Describe how to edit a sub procedure
	8.4	Describe how to run a sub procedure
	8.5	Describe how to work with VBA objects, properties, and methods
	8.6	Describe how to create an input box to retrieve information from the user
	8.7	Describe how to create and run If-Then control structures
	8.8	Describe how to work with comparison and logical operators
	8.9	Describe how to create message boxes
	8.10	Describe how to customise the Quick Access Toolbar
	8.11	Demonstrate customising Excel
<p><b>Methods of Evaluation:</b> A 3-hour essay written paper with 5 questions, each carrying 20 marks. Candidates are required to answer all questions. Candidates also undertake project/coursework in Advanced Excel with a weighting of 100%.</p>		

### Recommended Learning Resources: Advanced Excel

<b>Text Books</b>	<ul style="list-style-type: none"> <li>• Illustrated Course Guide: Microsoft Office Excel 2007 Advanced by Lynn Wermers. ISBN-10: 1423905369</li> <li>• Excel 2007 Formulas (Mr. Spreadsheet's Bookshelf) by John Walkenbach. ISBN-10: 0470044020</li> </ul>
<b>Study Manuals</b> 	BCE produced study packs
<b>CD ROM</b> 	Power-point slides
<b>Software</b> 	Microsoft Excel