Reduced Syllabus of
TDC with Computer Application (Vocational)

(CHOICE BASED CREDIT SYSTEM)

TDC Program with Computer Application (Vocational)

Qualification: HS Passed from any discipline

Program Objectives:

Upon successful completion of a TDC program with Computer Application, students will be able to:

1. Demonstrate proficiency in problem-solving techniques using thecomputer.
2. Demonstrate proficiency in at least one high-level programming language and one operating system.
3. Demonstrate proficiency in the analysis of complex problems and the synthesis of solutions to thoseproblems.
4. Demonstrate comprehension of modern software engineeringprinciples.
5. Demonstrate a breadth and depth of knowledge in latest Information Technology tools and techniques.

Program Learning Outcomes:

The goals of the computer science department are to prepare students for graduate training in some specialized area of computer science and applications, to prepare students for jobs in industry, business or government, and to provide support courses for students in technology, mathematics and other fields requiring computingskills.

COMPUTER APPLICATION (VOCATIONAL)

SL. NO.	CORE COURSE (14)	ABILITY ENHANCEMENT COURSE (AECC) (2)	SKILL ENHANCEMENT COURSE (SEC) (2)	ELECTIVE: DISCIPLINE SPECIFIC DSE (4)
1	DSC – 1A DSC – 2A: Fundamentals of Computer Application DSC- 3A	(English/Hindi/MIL Communication)		
2	DSC – 1 B DSC – 2B: Introduction to Programming in C DSC- 3B	Environmental Science		
3	DSC – 1 C DSC – 2C: DSC- 3C: Operating System		SEC 1: Multimedia Application	
4	DSC – 1 D DSC – 2D: DSC- 3D : Introduction to DBMS		SEC 2: (any one) 1.Sysytem Administration & Maintenance 2. ICT Hardware	
5			SEC 3:(any one) 1.Web Technology 2.PHP Programming 3.Computer Oriented Financial Accounting	DSE-1A DSE -2A: Project Work/ Dissertation DSE-3A
6			SEC 4: (any one) 1.Programming with PYTHON 2. Cyber Law 3. Management Information System	DSE-1B DSE -2B: (any one) 1. Programming in JAVA 2. Computer Networks 3. Software Engineering 4. E-Commerce Technologies DSE-3B

Detailed Syllabus

DSC- 2A: Fundamentals of Computer Applications

4 Lectures, 4 Practical, Credits 6 (4+2)
Theory: 60 Lectures, Practical: 60 Lectures
End Semester Marks:
Theory: 60 Marks, Practical: 20 Marks
Internal Marks:
Sessional: 10 Marks, Practical: 6 Marks, Attendance: 4 Marks

UNIT 1: Major components ofacomputer (10Lectures)

Block diagram, a brief introduction of computer Peripherals. Bootstrapping, Representation of Information, Number Systems, ASCII, EBDIC, BCD Gray code, Unicode, Conversion of bases.

UNIT2:Algorithms (10Lectures)

Concept of algorithm and flow chart, Writing simple algorithms and drawing flow charts.

UNIT 3:OperatingSystem (10Lectures)

Evolution of OS, types of OS, functions of OS, Case study on any OS, [No questions on theory paper will be set on these topics] System features, Software features, File structure, Installation of OS, Hardware & Software requirements.

UNIT 4:Data communication (10Lectures)

Different types of Transmission Media, Types of wireless communication (mobile, WiFi, WiMAX, Bluetooth, Infrared – concept and definition only)

UNIT5:Internet (10Lectures)

Evolution of internet, Basic internet terms(Client, Server, MODEM, Web page, Web site, Home page, Browser, URL, ISP, Web server), Internet applications (e-mail, search engines, ftp, VOIP, Video Conferencing, Audio-Video streaming, Chatting).

UNIT 6:Computer Security (10Lectures)

Definition, Viruses and Worms, Antivirus, Digital Signature, Software Piracy, Firewall. Hacking and Cracking (basic concepts only for these topics will have to be given).

Practical / Lab work to be performed

A. Office Automation Lab

Introduction to Open Office/MS Office/Libre Office

(N.B: Students have to perform the following experiments and are encouraged to work in the Linux platform**)**

1. Create a new folder and do thefollowing:
   - Make a word processing document init.
   - Make a Spreadsheet document init.
   - Make a new folder init
   - Rename the initialfolder
   - Move the initialfolder
   - Copy the initialfolder.
   - Delete the initialfolder
2. Implement the various well known features of the operating system such as Painting, System tools, Entertainment toolsetc.
3. Implement various display properties by right clicking on theDesktop.
4. Explore thetaskbar
5. Set the wall paper and screensaver.
6. Set thedata/time.

B. Word ProcessingTool

1. Create a documentand
   a. Put Bullets andNumbers
   b. Apply various Fontparameters.
   c. Apply Left, Right, and Centrealignments.
   d. Applyhyperlinks
   e. Insertpictures
   f. InsertClipArt
   g. Show the use ofWordArt
   h. Add Borders andShading
   i. Show the use of Find andReplace.
   j. Applyheader/footers
2. Create any document and show the use ofFile→versions.
3. Create any document and show the difference between paste and pastespecial.
4. Create a document to show the use ofWashout/Watermark.
5. Implement the concept of mailmerge.
6. Implement the concept ofmacros.
7. Implement the concept of importing afile/document.
8. Implement the concept of merging thedocuments.

9. Crate a student table and do thefollowing:
   a. Insert new row and filldata
   b. Delete any existingrow
   c. Resize rows andcolumns
   d. Apply border andshading
   e. Apply merging/splitting ofcells
   f. Applysort
   g. Apply various arithmetic and logicalformulas.
10. Create your resume using GeneralTemplates.

C. SpreadsheetTool

1. Create a student worksheet containing roll numbers, names and total marks. Open a document in Word and insert the excel worksheetusing:-
   i) Copy/Paste
   ii) Embedding
   iii) Linking
2. The term wise marks for APS class of 20 students are stored in 3 separate sheets named term1, term2 and term3. Create 4^{th} worksheet that contains student names and their total and average marks for the entire year. Give proper headings using headers. Make the column headings bold and italic. The 4^{th} worksheet should contain college name as the first line. Make it bold, italic and centerit.

3. Using a simple pendulum, plot 1-T and 1-T^2graph.

I	t1	t2	t3	Mean(t)	T=t/20	T^2
70						
80						
90						
100						

4. Consider the following employeeworksheet:-

Full Name (FirstLast)	Grade 1/2/3	Basic Salary	HRA	PF	Gross	Net	(VA) Vehicle Allowance

HRA is calculated as follows:

Grade	HRA % (of Basic)
1	40%
2	35%
3	30%

Gross = Basic + HRA + VA
Net = Gross –PF
PF is 8% for all Grades
VA is 15000, 10000 and 7000 for Grades 1, 2 and 3.

i) Find max, min and average salary of employees in respectiveGrade
ii) Count no. of people whereVA>HRA
iii) Find out most frequently occurringgrade.
iv) Extract records where employee name starts with "A" hasHRA>10000
v) Print Grade wise report of all employees with subtotals of net salary and also grand totals. Use subtotalcommand.
vi) Extract records where Grade is 1 or 2 and salary is between 10000 and 20000 bothinclusive.

5. In a meeting of a marketing department of an organization it has been decided that price of selling an item is fixed at Rs40. It was resolved to increases the sell of more of more items and getting the profit of Rs40,000/.Use Goal Seek of find out how many items you will have to sell to meet your profitfigure.

6. To study the variation in volume with pressure for a sample of an air at constant temperature by plotting a graph for P – V and P-I/V. Sample observationsare:-

Pressure (P)	Volume (V)	I/V	PV	P/V
75	20			
78.9	19			
83.3	18			
88.2	17			

7. Plot the chart for marks obtained by the students (out of 5) vs. frequency (total numberof students in class is50).
8. Create the following worksheet(s) containing a year wise sale figure of five salesmen inRs.

Salesman	2002	2003	2004	2005
MOHAN	10000	12000	20000	50000
MITRA	15000	18000	50000	60000
SHIKHA	20000	22000	70000	70000
ROHIT	30000	30000	100000	80000
MANGLA	40000	45000	125000	90000

Apply the following Mathematical & Statistical functions:

i) Calculate the commission for each salesman under the condition:-
   a) If total sales is greater than Rs. 3, 00,000/-, then commission is 10% of total sale made by thesalesman.
   b) Otherwise, 4% of totalsale.
ii) Calculate the maximum sale made by eachsalesman.
iii) Calculate the maximum sale made in eachyear.
iv) Calculate the minimum sale made by eachsalesman.
v) Calculate the minimum sale made in eachyear.
vi) Count the no. of salespersons.
vii) Calculate the cube of sales made by Mohan in the year2002.
viii) Find the difference in sales by salesman Mitra between the year 2002 and 2003. Find the absolute value ofdifference.
ix) Also calculate the Mode, Stddev, Variance, Median for the sale made by eachsalesman.
x) Calculate the year wise Correlation coefficient between the sales man Mohan and Mitra yearwise

9. The following table gives a year wise sale figure of five salesmen inRs.

Salesman	2000	2001	2002	2003
S1	10000	12000	20000	50000
S2	15000	18000	50000	60000
S3	20000	22000	70000	70000
S4	30000	30000	100000	80000
S5	40000	45000	125000	90000

a) Calculate total sale yearwise.
b) Calculate the net sales made by eachsalesman
c) Calculate the commission for each salesman under the condition:-
a) If total sales is greater than Rs. 4, 00,000/-, then commission is 5% of total sale made by thesalesman.
b) Otherwise, 2% of totalsale.
d) Calculate the maximum sale made by eachsalesman.
e) Calculate the maximum sale made in eachyear.
f) Draw a bar graph representing the sale made by eachsalesman.
g) Draw a pie graph representing the sale made by salesmen in year2001.

10. Consider the following worksheet for APS 1st yearstudents:-

S.No.	Name	PH	CH	BY	MT	CS	Total Marks	%	Grade
1									
2									

Grade is calculated as follows:-

If%>=90 Grade A
If % >=80 &<90 Grade B
If % >=70 &<80 Grade C
If % >=60 &<70GradeD
Otherwise students will be declared fail.

i) Calculate Grade using iffunction
ii) Sort the data according to totalmarks
iii) Apply filter to display the marks of the students having more than 65%marks.
iv) Draw a pie chart showing % marks scored in each subject by the topper of theclass.
v) Draw the doughnut chart of the data as in(iv)
vi) Enter the S.No. of a student and find out the Grade of the student usingVLOOKUP.
vii) Extract all records wherename
a) Begins with"A"
b) Contains"A"
c) Ends with"A"

D. PresentationTool

1. Make a presentation of College Education Systemusing
a. BlankPresentation
b. From DesignTemplate

c. From Auto ContentWizard

2. Make a presentation on “Wild Life” and apply thefollowing:
   a. Add audio and videoeffects
   b. Apply various ColorSchemes
   c. Apply various animationschemes.
   d. Apply SlideShow

REFERENCE BOOKS

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