# FOUR YEAR UNDERGRADUATE PROGRAM (NEP-2020)

# Program: Bachelor in Science (2024 -28) DISCIPLINE - INFORMATION TECHNOLOGY

### SESSION - 2024-25

|            | DSC -01 to 08  | DSE -01 to 12 |   |  |
|------------|--|---------------|---|--|
| Code       | Title  | Code          | Title                                   |  |
| ITSC-01T   | Fundamental of IT and MS-Office                                  | ITSE -01      | Data Structure                          |  |
| ITSC-01P   | Lab 1: MS-Office   | ITSE -02      | Internet and E-Commerce                 |  |
| ITSC-02T   | Programming in C++   | ITSE -03      | Information and Network Security        |  |
| TESC-02P   | Lab 2: Programming in C++  | ITSE -04      | Introduction to Artificial Intelligence |  |
| Π'SC-03'Γ  | Relational Database Management System                            | 1TSE -05      | Computer System Architecture            |  |
| ITSC-03P   | Lab 3: Relational Database Management<br>System (Oracle / MySQL) | ITSE -06T     | Mobile Application Development          |  |
| ITSC-04T   | Programming in . Net   | ITSE -06P     | Lab 8: Mobile Application Development   |  |
| ITSC-04P   | Lab 4: Programming in . Net                                      | ITSE -07      | Software Engineering                    |  |
| ITSC-05T   | Programming in Java  | ITSE_08       | Theory of Computation                   |  |
| ITSC-05P   | Lab 5; Programming in Java                                       | ITSE -09      | Soft Computing                          |  |
| ITSC-06T   | Web Technology   | ITSE -10      | Computer Graphics                       |  |
| ITSC-06P   | Lab 6: Web Technology  | ITSE-11       | Cloud Computing                         |  |
| 11'SC-071' | Programming in Python  | ITSE -12      | Major Project                           |  |
| TISC-07P   | Lab 7: Programming in Python                                     |               |   |  |
| ITSC-08T   | Fundamental of IoT and Applications                              |               |   |  |
| ITSC-08P   | Lab 9: Fundamental of IoT and Applications                       |               |   |  |
|            | DGE -01 & 02   |               | VAC                                     |  |
| ITGE -01T  | Fundamental of IT and MS-Office                                  | ITVAC-01      | Artificial Intelligence                 |  |
| ITGE -01P  | Lab 1: MS-Office   |               | SEC                                     |  |
| TTGE -021  | Programming in C++   | ITSEC-01      | MS OFFICE                               |  |
| "TGE -02P  | Lab 2: Programming in C++  | li li         | Chairman<br>Studies W                   |  |

# Program Outcomes (PO):

Gain a complete exposure to the theories and practices of Information Technology.

 Get transformed into a skilled learner and active programmer, enabling the students to focus on their higher studies.

dyalaya, F. Rigarh (C.G

Value IT professionals and programmers.

• Explore how the concepts and applications of Information technology lead to innovative thinking with Shahood technology lead to innovative thinking with problem-solving attitude.

# Program Specific Outcomes (PSO):

Understand the basic IT knowledge and practical application in MS Office.

Understanding the concept of programming and develop program in C++.

Understanding the concept of data structure and implementation with C/C++.

Dr. H. S. Hota Krun

Chairvnan (Drk. B. Duhay) (Dr. S. Saly) Suggested (Dr. Amblytama) (Dr. S. Jain) (R. Khyuttey) Sha

Inderstanding the concept of DBMS and implementation in MySQL / Oracle,

Understanding the concept of Dot Net technology with practical implementation.

Understanding the concept of OOPs and Java programming and develop program in Java.

Understanding the concept of web technology and its implementation with HTML / CSS / DHTML / PHP.

Understand the basic concept of internet and E-commerce.

Understanding the basic concept of information and network security.

Understanding the basic concept of Artificial Intelligence.

Dr. H. S. Hoto Line. Cheurman Or. k.g. Dubay) 7

# **Curriculum Structure**

# Scheme

Program: B.Sc.

Discipline: Information Technology

| Semester                              | Course Type           | Course Code                 | Course Title  | Total<br>Credit | ****** |             |
|---------------------------------------|-----------------------|-----------------------------|---|-----------------|--------|-------------|
|                                       | Course Type           |                             |   | Crean           | Max    | Min         |
| 14                                    |                       | ITSC-01T                    | Fundamental of IT and MS-Office                               | 3               | 100    | 40          |
| Semester                              | DSC<br>(Major/Core)   | TTSC-01P                    | Lab 1: MS-Office  | 1               | 50     | 20          |
| 2 <sup>nd</sup>                       | Control of the second | ITSC-02T Programming in C+1 |   | 3               | -100   | 40          |
| Semester                              | DSC<br>(Major/Core)   | ITSC-02P                    | Lab 2: Programming in C++                                     | 1               | 50     | 20          |
| Vietnamilas                           | DSC                   | ITSC-03T                    | Relational Database Management<br>System                      | 3               | 100    | 40          |
| 3 <sup>rd</sup><br>Semester           | (Major/Core)          | ITSC-03P                    | Lab 3: Relational Database  Management System  (Oracle/MySQL) | 1               | 50     | 20          |
|                                       | DSE                   | ITSE-01                     | Data Structure  | 4               | 100    | 40          |
| Commission of Marie Value             |                       | ITSC-04T                    | Programming in .Net   | 3               | 100    | 40          |
| 406                                   | DSC<br>(Major/Core)   | 1T'SC-04P                   | Lab 4: Programming in .Net                                    | 1               | 50     | 20          |
| Semester                              | DSE                   | ITSE-02                     | Internet and E-Commerce                                       | 4               | 100    | 40          |
| 1 - 2 - 11 - 18 /c - 10 · 1 · 10 · 10 |                       | ITSC-05T                    | Programming in JAVA   | 3.              | 100    | 40          |
| 5111                                  | DSC<br>(Major/Core)   | ITSC-05P                    | Lab 5: Programming in JAVA                                    | 1               | 50     | 20          |
| Semester                              | DSE                   | ITSE-03                     | Information and Network Security                              | 4               | 100    | 40          |
|                                       |                       | ITSC-06T                    | Web Technology  | 3               | 100    | 40          |
| 6111                                  | DSC<br>(Major/Core)   | ITSC-06P                    | Lab 6: Web Technology   | 1               | 5013   | 20<br>1 men |
| Semeste                               | DSE (c)               | ITOT 04                     | Introduction to Artificial<br>Intelligence                    | 4               | Signie |             |
|                                       | T                     |                             |   | have stores     |        | n, Hai      |
| Sincal Maluy                          | . I DSC               | TTSC-07T                    | Programming in Python   | 3               | 100    | . 40        |
| Semester                              | (Major/Core)          |                             | Lab 7: Programming in Python                                  | !_              | 50     | 20          |
| Gemester                              | DSE                   | ITSE-05                     | Computer System Architecture                                  | 4               | 100    | 40          |

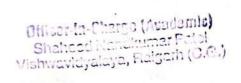
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(Dr.K. & Dubey)

| (F)(35)              |   |                                      |  |     |              |                       |             |
|----------------------|---|--------------------------------------|--|-----|--------------|-----------------------|-------------|
|                      |   | ITSE-06T                             | Mobile Application Development                   | 3   | 100          | 40                    |             |
|                      |   | ITSE-06P                             | Lab 8: Mobile Application Development            | I   | 50           | 20                    |             |
|                      |   | ITSE-07                              | Software Engineering                             | 4   | 100          | 40                    |             |
|                      |   | ITSE-08                              | Theory of Computation                            | 4   | 100          | 40                    |             |
|                      |   |                                      |  |     |              |                       |             |
|                      | DSC   | ITSC-08T                             | Fundamental of IoT and Applications              | 3   | 100          | 40                    |             |
| 1                    | (Major/Core)  | ITSC-08P                             | Lab 9: Fundamental of IoT and Applications       | 1   | 50           | 20                    |             |
| Sth<br>Semester      | DSE   | ITSE-09                              | Soft Computing                                   | 4   | 100          | 40                    |             |
| Semeste.             |   | ITSE-10                              | Computer Graphics                                | 4   | 100          | 40                    |             |
|                      | Y   | ITSE-10                              | Cloud Computing                                  | 4   | 100          | 40                    |             |
|                      |   | ITSE-12                              | Major Project                                    | 4   | 100          | 40                    |             |
| Chevirmo<br>R.Khuutk | y) (Sushid  |                                      | John John Jan Jan Jan Jan Jan Jan Jan Jan Jan Ja | CP  | The state of | s. Jain               | lest        |
| Offi                 | sor in Pharps (/<br>aheod Nandar<br>vavidyalaya, Fi | ngadamia)<br>mar Pobl<br>sanh (O.G.) | (9/2- Jacob)                                     | - 1 | laya, Ra     | Mar Pala<br>ligath (C | <br>!<br>.e |

# FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28) DEPARTMENT OF INFORMATION TECHNOLOGY COURSE CURRICULUM

| P   | AF   | RT- A: Introd         | uction               |  |  |                  |
|---|--|-----------------------|----------------------|--|--|------------------|
| Pr  | og   | ram: Bachelorin       | Science (IT)         | C  |  |                  |
| (C  | erti   | ficate / Diploma / De | gree/Honors)         | Semester - I   | Session: 2024  | -2025            |
| 1   | C  | ourse Code            | ITSC-01T             |  |  |                  |
| 2   | C  | ourse Title           | Fundamental of IT    | and MS-Office  |  |                  |
| 3   | C  | ourse Type            | DSC (Discipline Spe  | cific Course)  |  |                  |
| 4   | P  | rerequisite           | As per program       |  |  |                  |
| 5   | After Completing this c  Study and use of Organize files an Acquire knowled Develop informs in advance trend   |                       |                      | f basic concepts and terr<br>nd documents on storag<br>dge of ICT and Internet<br>ation technology soluti<br>ls of IT. | minology of information te<br>te devices.  | quirements       |
| 6   |  | redit Value           |                      |  | earning & Observation  |                  |
|   |  | otal Marks            | Max. Marks: 100      |  | Min Passing Marks:   | 40               |
| A   | R.   |                       | t of the Course      |  | The state of the s | _                |
|   |  | Total No. of Tea      | ching-Learning Perio | ods (01 Hr. per peri   | od) - 45 Periods (45 H   | ours)            |
| Un  | iit  |                       | Topics               | (Course contents)  |  | No. of<br>Period |
|   | Indian Knowledge System and Computer Science: Number System in India-Historical evidence, Salient aspect of Indian Mathematics. Bhuta-Samkhya system, Katapayadi system, pingala and the binary system, Sulbha Sutra as modern arithmetic and numerical mathematics.  Introduction to Computer: History of computer, Generations and Classification, Basic Anatomy of Computer: Block Diagram, Central Processing Unit (CPU): Function of each Unit, Memory: Primary, Cache, Flash, Software and its needs, Types of S/W: System Software and Application Software, Types of Programming Language: Machine Language, Assembly Language, High Level Language their advantages and disadvantages, Language Processors/Translators: Assembler, Interpreter and Compiler, Fundamental of Information Technology: Data and Information, Concept of IT, Application of IT, What is ICT?, Components of ICT, Impact of ICT in Society.  Advanced Trends in IT: Cloud Technology, Virtual LAN Technology, M-Commerce, Nanotechnology, Virtual Reality, 3-D Printing, Internet of Things (IoT), Artificial Intelligence (AI), Machine Learning (ML), Cloud Computing, Quantum Computing, G-Suite, GoI digital initiatives in higher education: SWAYAM, Swayam Prabha, National Academic Depository, National Digital Library of India, E-Sodh-Sindhu, Virtual labs, e-Yantra and NPTEL. |                       |                      |  | 12   |                  |
| MS-Word: Introduction to word processing software and its features, Creating new document, Saving documents, Opening and Printing documents. Home Tab: Setting fonts, Paragraph settings, Various styles (Normal, No spacing, Heading1, Heading2, Title, Strong), Find & Replace, Format painter, Copy paste and paste special. Insert Tab: Pages, Tables, Pictures, Clipart, Shapes, Header & Footer, Word Art, Equation and Symbols. Page Layout Tab: Page setup, Page Background, Paragraph (indent and spacing). Mailing Tab: Create Envelops and Labels, Mail Merge. Review Tab: Spelling and Grammar check, New comment, Protect document, View Tab: Document views, Zoom, Window (New window, Split, Switch window). |  |                       |                      |  | n<br>irmaņ   |                  |





III MS-Excel: Introducing Excel, Use of Excel sheet, creating new sheet, Saving, Opening, and Printing workbook. Home Tab: Font, Alignment, Number, Styles and cells and editing, Conditional Formatting. Insert Table, Charts (column chart, Pic chart, Bar chart, Line chart) and Texts (header & footer, word art, signature line). Page Layout Tab: Page setup options, Scale to fit (width, height, scale). Formulas Tab: Auto sum (sum, 11 average, min, max), Logical (IF, and, or, not, true, false), Math & Trig (sin, cos, tan, ceiling, floor, fact, mod, log), Sort and Filter options, Data validation, Group and ungroup. Review Tab: Protect sheet, Protect workbook, and Share workbook. View Tab: Page breaks, Page layout, Freezing Panes, Split and hide. Working with PowerPoint and MS-Access IV PowerPoint: Introducing PowerPoint, Use of PowerPoint presentation, Creating new slides saving, Opening and printing. Home Tab: New slide, Layout, Reset, Delete, Setting text direction, Align text, Convert to smart art, Drawing options. Insert Tab: Table, Picture, Clipart, Photo album, Smart art, Shapes and chart, Movie and sound, Hyperlink and action, Text box, Word art, Object. Design Tab: Page setup options, Slide orientation, Applying various themes, Selecting background style and formatting it. 11 Animations Tab: Custom animation for entrance, Exit and emphasis, Applying slide transition, Setting transition speed and sound, Animation on rehearse timing. Slideshow & View Tab: Start slide, Show options, and Setup options. View tab: Presentation views, Colors and Window option. MS-Access: Introduction to DBMS, features of DBMS, creating blank databases, Saving it in accdb format, Defining data type in MS Access, Creating tables, creating reports, query wizard. Information Technology (IT), Information and Communication Technology (ICT), G-Suite, MS Word, MS Excel, MS Power Point, MS-Access. Signature of Convener & Members of CBoS: Drottes Hora Theken

#### Learning Resources PART-C:

Text Books, Reference Books and Others

### Text Books Recommended:

- Computer Fundamentals, P.K. Sinha, BPB Publication, Sixth Edition.
- Fundamentals of Information Technology, Chetan Shrivastava, Kalyan Publishers.
- Fundamentals of Computers, V. Rajaraman, PHI Sixth Edition.
- Computer Fundamentals and Office Automation, Dr. Santosh Kumar Miri, Iterative International Publisher IIP.
- Computer Fundamentals Architecture and Organization, B. Ram, New Age International Publishers, Fifth Edition.
- Fundamentals of Information Technology, Alexis Leon and Mathews Leon, Vikash Publication.

### Reference Books Recommended:

- Introduction to Information Technology, V. Rajaraman, PHI publication.
- Fundamental of IT, Leon and Leon, Leon Tec world.
- Introduction to Information Technology, Aksoy and Denardis, Cengage learning.
- Computers Today, Suresh K. Basandra, Galgotia Publications.
- Information Technology The breaking wave, Dennis P.Curtin, Kim Foley, Kunai Sen and Cathleen Morin, TMH.
- OFFICE 2013 in Simple Steps, Kogent Solution Inc., DremTech Press.
- Access 2010 in Simple Steps by Kogent Learning Solutions Inc.

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# Online Resources:

- Introduction to Computer Fundamental from W3school: https://www.w3schools.blog/computer-fundamentals-tutorial
- Introduction to MS-Word from W3school; https\_www.w3schools.blog/ms-word-jutorial
- Introduction to MS-Excel from W3school:
  - https://www.w3schools.com/excel/excel\_introduction.php
- Introduction to MS-PowerPoint from W3school: https://www.w3schools.blog/powerpoint-intorial
- Introduction to MS-Access from W3school: https://www.w3schools.com/sql/sql\_ref\_msaccess.asp
- Fundamentals of Computers & Information Technology (in Hindi): https://www.mcu.ac.in/wp-content/uploads/2020/04/1PGDCA1-Unit-I-Fundamentals-of-Computers-Information-Technology.pdf.
- Fundamentals of Computers & Information Technology (in Hindi): https://hte.rajasthan.gov.in/dept/dte/board of technical education, rajasthan/government poly technic\_college\_hanumangarh/uploads/doc/fundamental-\_final-rkd pdf
- Information and Computers Technology: https://ebseacademic.nic.in/web\_material/doc/2014/11\_ICT-IX.pdf.pdf.
- Microsoft Office (in Hindi): hups://www.scribd.com/document/534988849/9-Microsoft-office-in-hindi-www-GkNotesPDF com.
- MS-OFFICE:
  - https://www.rgycsm.org/uploads/books/MICROSOFT-OFFICE-BOOK.pdf.
- MS-OFFICE:
  - Hindi Notes: https://www.copaguide.com/2020/04/ms-office-topics.html.
- Microsoft Office Full Crash Course: https://www.youtube.com/watch?v=SH4ovV5AJ6A

| PART -D: Assess  | ment and Evaluation   |   |  |  |
|--|---|---|--|--|
| Suggested Continuous E<br>Maximum Marks:   | valuation Methods:<br>100 Marks   |   |  |  |
| Continuous Internal Ass<br>End Semester Exam (ES   |   |   |  |  |
| Continuous Internal<br>Assessment (CIA):<br>(By Course Teacher)  | Internal Test / Quiz-(2): 20 +20 Assignment / Seminar - 10 Total Marks - 30 | Better marks out of the two Test /<br>Quiz obtained marks in Assignment<br>shall be considered against 30 Marks |  |  |
| End Semester  Exam (ESE):  Two section – A & B  Section A: Q1. Objective – 10 x1= 10 Mark; Q2. Short answer type- 5x4 = 20 Mark  Section B: Descriptive answer type qts., 1 out of 2 from each unit-4x10-40 Mark |   |   |  |  |

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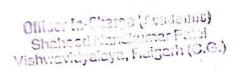
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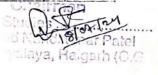
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valaya, Raigarh (C.C.

# FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28) DEPARTMENT OF INFORMATION TECHNOLOGY

| -  | A D. T. B   | Course Cu  | RRICULUM   |  |            |  |  |
|--|---|--|--|--|------------|--|--|
|  |   | duction  |  |  |            |  |  |
| Program: Bachelor in Science (IT) (Certificate / Diploma / Degree) |   |  | Semester - I   | Session: 2024-2  | 2025       |  |  |
| 1  | Course Code   | TTSC-01P   | L  |  |            |  |  |
| 2  | Course Title  | Lab 1: MS- Office  |  |  |            |  |  |
| 3  | Course Type Practical   |  |  |  |            |  |  |
| 1  | Prerequisite  | The state of the s |  |  |            |  |  |
| 17,  | Course Learning.<br>Outcomes (CLO)  | <ul> <li>Acquire knowledge o</li> <li>Develop information<br/>advance trends of IT.</li> <li>Acquire knowledge o</li> </ul>  | edge of MS-Office. cuments on storage de f ICT and Internet app technology solutions b of MS-Excel, MS-Pow | evices.  Ilications.  By evaluating user require  CrPoint and MS-Access. |            |  |  |
| 7  |   | 1 Credits   Credit = 30 E  | Min Passing N  |  | ung<br>——— |  |  |
|  | Spam and Tras  2. How to design  3. How to create  4. How do teach  | Application of Information and | te the uses of Inbox,<br>s with appropriate woogle classroom.  | Sent, Outbox, Draft,   | 30 Hrs     |  |  |
|  | 6. How to use so 7. How to use so 8. How to use Go 9. How to shar Bluetooth.  | nts find assignments, due date<br>cial media platforms like twit<br>cial media platforms like Flic<br>cogle spreadsheets, Google S<br>e files between mobile ph  | ter, Facebook and Y<br>kr, Skype, yahoo an<br>lides and Google for<br>one and computer                     | ouTube?<br>d WhatsApp?<br>ms?<br>system/Laptop using                     |            |  |  |
|  |   | MS-Wo  | ord  |  |            |  |  |
|  | MS-Word  1. Prepare a grocery list having four columns (Serial number, the name of the product, quantity and price) for the month of April, 06.  > Font specific actions for Title (Grocery List):14-pointArialfontinboldanditalics.  > The headings of the columns should be in12-point and bold.  > The rest of the document should be in10-point Times New Roman.  > Leave a gap of 12-points after the title. |  |  |  |            |  |  |





2. Create a telephone directory.

> The heading should be16-point Arial Font in bold.

> The rest of the document should use 10-point font size.

> Other headings should use 10-point Courier New Font.

The footer should show the page number as well as the date last updated.

3. Design a time-table form for your college.

- > The first line should mention the name of the collegein16-point Arial Font and should be bold.
- > The second line should give the course name/teacher's name and the department in14-pointArial.

> Leave a gap of 12-points.

> The rest of the document should use 10-point Times New Roman font.

- > The footer should contain your specifications as the designer and date of creation.
- 4. XYZ Publications plan store lease an e-book design dapper your syllabus. Design the First page of the book as per the given specifications.

> The title of the book should appearinboldusing20-pointArialfont.

> The name of the author and his qualifications should be in the center of the page in 16-point Arial font.

> At the bottom of the document should be the name of the publisher and address

in16-point Times New Roman.

> The details of the offices of the publisher (only location) should appear in the footer.

5. Create the following one page documents.

> Compose a note inviting friends together at your house, including a list of things to bring with them.

> Design a certificate in landscape orientation with a border around the document.

> Design a Garage Sale sign.

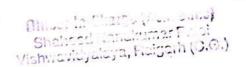
> Make an assignment outlining your rules for your bedroom at home, using a numbered list.

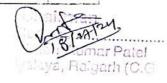
6. Create the following documents:

- > A newsletter with a headline and 2 columns in portrait orientation, including at least one image surrounded by text.
- > Use a newsletter format to promote upcoming projects or events in your classroom or college.
- 7. Convert following text to a table, using comma as delimiter Type the following as shown (do not bold).

Color, Style, Item Blue, A980, Van Red, X023, Car Green, YL724, Truck Name, Age, Sex Bob, 23, M Linda, 46, F Tom, 29, M

8. Enter the following data into a table given on the next page.





| Salesperson     | Dolls | Trucks | Puzzles |
|-----------------|-------|--------|---------|
| Kennedy, Sally  | 1327  | 1423   | 1193    |
| White, Pete     | 1421  | 3863   | 2934    |
| Pillar, James   | 5214  | 3247   | 5467    |
| York, George    | 2190  | 1278   | 1928    |
| Banks, Jennifer | 1201  | 2528   | 1203    |
| Atwater, Kelly  | 4098  | 3079   | 2067    |
| Pillar, James   | 5214  | 3247   | 5467    |
| York, George    | 2190  | 1278   | 1928    |
| Banks, Jennifer | 1201  | 2528   | 1203    |
| Atwater, Kelly  | 4098  | 3079   | 2067    |

Add a column Region (values: S, N, N, S, S, S) between the Salesperson and Dolls columns to the given table Sort your table data by Region and within Region by Sales person in ascending order:

In this exercise, you will add a new row to your table, place the word Total at the bottom of the Sales person column, and sum the Dolls, Trucks, and Puzzles columns.

- 9. Wrapping of text around the image.
- 10. How to install MS-Office in Windows operating system.
- 11. How to convert word, excel and PowerPoint into pdf & pdf to word.
- 12. How to merge and split pdf files.

#### MS-Excel

1. Enter the Following data in Excel Sheet

| REGIONAL SALES PROJECTION |      |      |      |      |           |             |
|---------------------------|------|------|------|------|-----------|-------------|
| State                     | Qtr1 | Qtr2 | Qtr3 | Qtr4 | Qtr Total | Rate Amount |
| Delhi                     | 2020 | 2400 | 2100 | 3000 | 15        |             |
| Punjab                    | 1100 | 1300 | 1500 | 1400 | 20        |             |
| U,P.                      | 3000 | 3200 | 2600 | 2800 | 17        |             |
| Haryana                   | 1800 | 2000 | 2200 | 2700 | 15        |             |
| Rajasthan                 | 2100 | 2000 | 1800 | 2200 | 20        |             |
| TOTAL                     |      |      |      |      |           |             |
| AVERAGE                   |      |      |      |      |           |             |

a. Apply Formatting as follow:

Title in TIMES NEW ROMAN

FontSize-14

Remaining text-ARIAL, FontSize-10

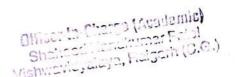
State name and Qtr. Heading Bold, Italic with Gray Fill Color.

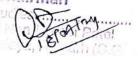
Numbers in two decimal places.

Qtr. Heading in center Alignment.

Apply Border to whole data.

- b. Calculate State and Qtr. Total
- c. Calculate Average for each quarter
- d. Calculate Amount=Rate\*Total.





2. Given the following worksheet

|   | Α        | В         | C     | D     |
|---|----------|-----------|-------|-------|
| 1 | Roll No. | Name      | Marks | Grade |
| 2 | 1001     | Sachin    | 99    |       |
| 3 | 1002     | Schwag    | 65    |       |
| 4 | 1003     | Rahul     | 41    |       |
| 5 | 1004     | Sourav    | 89    |       |
| 6 | 1005     | Harbhajan | 56    |       |

Calculate the grade of these students on the basis of following guidelines:

| If Marks      | Then Grade |
|---------------|------------|
| >=80          | A+         |
| >= 60 and <80 | Α          |
| >= 50 and <60 | В          |
| <50           | F          |

3. Given the following worksheet

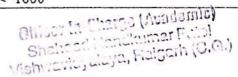
|   | Α                      | В    | С    | D     | E     | F     | G          |
|---|------------------------|------|------|-------|-------|-------|------------|
| 1 | Salesman Sales in(Rs.) |      |      |       |       |       |            |
| 2 | No.                    | Qtr1 | Qtr2 | Qtr3  | Qtr4  | Total | Commission |
| 3 | S001                   | 5000 | 8500 | 12000 | 9000  |       |            |
| 4 | S002                   | 7000 | 4000 | 7500  | 11000 |       |            |
| 5 | S003                   | 4000 | 9000 | 6500  | 8200  |       |            |
| 6 | S004                   | 5500 | 6900 | 4500  | 10500 |       |            |
| 7 | S005                   | 7400 | 8500 | 9200  | 8300  |       |            |
| 8 | S006                   | 5300 | 7600 | 9800  | 6100  |       |            |

Calculate the commission earned by the salesman on the basis of following Candidates:

| If Total Sales      | Then Commission |
|---------------------|-----------------|
| <20000              | 0% of sales     |
| > 20000 and < 25000 | 4% of sales     |
| > 25000 and < 30000 | 5.5% of sales   |
| > 30000 and < 35000 | 8%of sales      |
| >=35000             | 11%of sales     |

The total sales are the sum of sales of all the four quarters.

- 4. Company XYZ Ltd. pays a monthly salary to its employees who consist of basic salary, allowances & deductions. The details of allowances and deductions are as follows:
  - HRA Dependent on Basic
     30% of Basic if Basic<=1000</li>
     25% of Basic if Basic>1000 & Basic<=3000</li>
     20% of Basic if Basic>3000
  - DA Fixed for all employees,30% of Basic
  - Conveyance Allowance(CA) Rs.50/- if Basic is <=1000</li>



Va Clopis of

Rs.75/- if Basic > 1000 & Basic <= 2000

Rs.100 if Basic>2000

Entertainment Allowance (EA)

NIL if Basic is <= 1000 Rs.100/-if Basic > 1000

#### Deductions

Provident Fund

6% of Basic

Group Insurance Premium

Rs.40/-if Basic is <=1500

Rs.60/-if Basic > 1500 & Basic <= 3000

Rs.80/-if Basic>3000

Calculate the following:

Gross Salary=Basic +HRA+ DA+ CA+ EA

Total Deduction=Provident Fund + Group Insurance Premium

Net Salary=Gross Salary-Total Deduction

5. Create Payment Table for a fixed Principal amount, variable rate of interests and time in the form at below:

| No. of Installments | 5%  | 6% | 7% | 8%  | 9% |
|---------------------|-----|----|----|-----|----|
| 3                   | XX  | XX | XX | XX  | XX |
| -4                  | XX- | XX | XX | -XX | XX |
| - 5                 | XX  | XX | XX | XX  | XX |
| 6                   | XX  | XX | XX | XX  | XX |

6. Use an array formula to calculate Simple Interest for given principal amounts given the rate of Interest and time

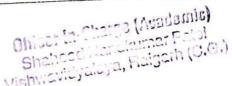
| ia time          |                 |
|------------------|-----------------|
| Rate of Interest | 8%              |
| Time             | 5Years          |
| Principal        | Simple Interest |
| 1000`            | ?               |
| 18000            | ?               |
| 5200             | ?               |

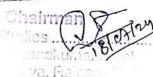
7. The following table gives a year wise sale figure of five salesmen in Rs.

| 2019  | 2020  | 2021  | 2022   |
|-------|---|---|--|
|       | 12000   | 20000   | 50000  |
| 15000 | 18000   | 50000   | 60000  |
|       | 22000   | 70000   | 70000  |
|       | 30000   | 100000  | 80000  |
|       |   | 125000  | 90000  |
|       | 2019<br>10000<br>15000<br>20000<br>30000<br>40000 | 10000     12000       15000     18000       20000     22000       30000     30000 | 10000     12000     20000       15000     18000     50000       20000     22000     70000       30000     30000     100000 |

- a. Calculate total sale year wise.
- b. Calculate the net sale made by each salesman
- c. Calculate the maximum sale made by the salesman
- d. Calculate the commission for each salesman under the condition.

>> If total sales > 4, 00,000 give 5% commission on total sale made by the salesman.





>> Otherwise give 2% commission.

- e. Draw a bar graph representing the sale made by each salesman.
- f. Draw a pie graph representing the sale made by a salesman in 2000.
- 8. Enter the following data in Excel Sheet

# PERSONAL BUDGET FOR FIRST QUARTER

Monthly Income(Net): 1,475

| EXPENSES        | JAN    | FEB    | MARCH<br>QUARTER<br>TOTAL | QUARTER<br>AVERAGE |
|-----------------|--------|--------|---------------------------|--------------------|
| Rent            | 600.00 | 600.00 | 600.00                    |                    |
| Telephone       | 48.25  | 43.50  | 60.00                     |                    |
| Utilities       | 67.27  | 110.00 | 70.00                     |                    |
| Credit Card     | 200.00 | 110.00 | 70.00                     |                    |
| Oil             | 100.00 | 150.00 | 90.00                     |                    |
| AV to Insurance | 150.00 |        |                           |                    |
| Cable TV        | 40.75  | 40.75  | 40.75                     |                    |
| Monthly Total   |        |        |                           |                    |

- Calculate Quarter total and Quarter average.
- b. Calculate Monthly total.
- c. Surplus=Monthly income-Monthly total.
- d. What would be the total surplus if monthly income is 1500.
- e. How much does the telephone expense for March differ from quarter average?
- f. Create a 3D column graph for telephone and utilities.
- g. Create a pie chart for monthly expenses.
- 9. Enter the following data in Excel Sheet

# TOTAL REVENUE EARNED FOR SAM'S BOOK STALL

| Publisher Name |              | 1998        | 1999         | 2000          | Tota |
|----------------|--------------|-------------|--------------|---------------|------|
|                | Rs. 1,000.00 | Rs. 1100.00 | Rs. 1,300.00 | Rs. 800.00    |      |
|                | Rs. 1,500.00 |             | Rs. 1,000.00 | Rs. 2,000.00  |      |
|                | Rs. 700.00   |             |              | Rs. 600.00    |      |
|                | Rs. 1,200.00 | Rs. 500.00  |              | Rs. 1,100.00. |      |

- a) Compute the total revenue earned.
- b) Plot the line chart to compare the revenue of all publishers for 4 years.
- c) Chart Title should be Total Revenue of Sam's Book stall(1997-2000)'
- d) Give appropriate categories and value axis title.
- 10. Generate 25 random numbers between 0 & 100 and find their sum, average and count. How many no. are in the range 50-60.

# MS-Power Point

- 1. Do the following task:
  - Start a new blank presentation
  - Your first Slide is going to be a Title Slide
  - Write the Text as in the preview below:
    - Lighthouse Co Ltd
    - o Make the Font of "Lighthouse" Arial Black and size 88

- Insert a second slide this should be with a layout of Bulleted List
- Write the Text as in preview below
- [Title]: Lighthouse Co Ltd
- [Body]:
  - Mission Statement
  - ii. Company Objectives
  - iii. Management Team
  - iv. Employees
  - v. Sales

Make the Font Color of the Points to Green

Insert a third slide that should be an Organization Chart.

Include the following people in the chart:

- a. David Brent, General Manager
- b. Tim Canterbury, Head of Sales
- c. Gareth Keenan, Assistant to the General Manager
- Dawn Tinsley , Human Resources Manager
   Add a fourth slide and this should be a Table Chart.

The chart should look like the following:

| New Products               | Discontinued Products    |
|----------------------------|--------------------------|
| Digital Cameras            | 8mm Cameras              |
| Ultra Slim Video Camera    | 8x Zoom Video Camera     |
| 25" Plasma TV321"          | Black and White TVs      |
| DVD Recorders              | Video Players            |
| 7.1 Dolby Surround Systems | 2 channel stereo systems |

 Make the titles New Products and Discontinued Products with a shadow effect and centered in the cell. Widen columns to fit Text as above.

The Fifth slide should be a Chart slide. The chart should be a bar chart, and include
the following data must be used to form the chart:

| wing data must c | January | February | March | April |
|------------------|---------|----------|-------|-------|
| TVa              | 20      | 27       | 90    | 75    |
| DVDs             | 30      | 38       | 34    | 31    |
| Wifi equipment   | 45      | 46       | 45    | 43    |
| Video Recorders  | 25      | 29       | 15    | 40    |

- Change the colours of the chart so that the series of bars are red, yellow, pink, and green.
- Add a light coloured background to all slides in the presentation.
- Add also Transition effects between each slide and also different effects for all text and pictures in the presentation.
- Reverse the order of the second and third slides
- Save the presentation as Light House Ltd.

### 2. Do the following:

Load your Presentation Application and start a new presentation

- The first slide is a Title Slide. Select the appropriate layout and enter the title: Annual Food Fair
- Add the subtitle: .A Celebration of Eating
- Insert a small, red circle at the bottom right of the title slide.
- Change the font color for the whole title and subtitle to blue, and apply a text shadow effect just to the words Food and Fair

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Insert a second slide to the presentation, selecting a layout appropriate for a series of bullet points, and using the title: The Menu. Enter the following text:

i. Chocolate Desserts

ii. Cakes and Puddings

iii. Roast Meals

iv. Using Pasta Creatively

Change the line spacing for these bullet points to 1.5 lines.

Increase the font size for the words The Menu in the title.

- Add a footer with your name and the text: Food Fair so they both appear on every slide, and number all the slides. (Make sure the number is not obscured by the red circle on the title slide)
- Insert a third slide, which is to be an organization chart. Use the title Meet The Team. Enter: Maggie Peet, Manager at the top of the chart, and show the following three as reporting to Maggie Peet: Brian Webb, Bookings; Janine Newton, Publicity; Gregg Brown, Accounts

Embolden the text in the title of the third slide, and change the font to Arial.

Apply a light coloured background to all the slides in the presentation

On the third slide, insert an image suitable for the topic of food from an image library. Reduce the size of the image and place it where it will not interfere with

Save the presentation as foodfair.

Print the presentation with three slides per page, and close the presentation.

3. Do the followings:

Load your Presentation Application and start a new presentation

The first slide is a Title Only Slide. Select the appropriate layout and enter the title: Cook Family Cruises.

Add a small blue rectangle at the top left of this slide.

- Change the font color for the whole title to red, and apply a text shadow effect just to the word Cruises.
- Insert a second slide to the presentation, selecting a layout appropriate for a series of bullet points, and using the title: Our Itinerary. Enter the following text:
  - Canary Islands a.
  - Mediterranean Ь.
  - Greek Islands
- Change the line spacing for these bullet points to 2 lines. Increase the font size of the word Itinerary in the title. Add a footer with your name and the text: Cruise Information so they both appear on every slide, and number all the slides.
- Insert a third slide, which is to be a graph. Use the title Our Market Share. Use the following data to produce a pie chart: Cook 54%; Jackson 28%; Wilson 12%; Bennett 5%

Embolden the text in the title of the third slide, and change the font to Arial.

Apply a different background to each slide in the presentation.

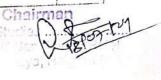
- On the third slide, insert an image suitable for the topic of holidays from an image library. Reduce the size of the image and place it where it will not interfere with
- Add a 4-slide containing nothing but the text; Travel with us for less!!

Save the presentation as a holiday.

Print the presentation with 4 slides per page, and close the presentation.

4. Creating an animation looks like the leaf is falling in a tree.

5. Creating an animation looks like demolishing a world trade center in America.



#### MS-Access

- Create a database named "college" and perform the following tasks:
  - A. Create a table named "student" having following fields:
    Class, Roll no and Name with these Information i.e., Field Name, Data type
    and Description
  - B. Fill at least 5 records.
  - C. Prepare a query to display all records and Name should be in ascending order.
- 2. Create the employee table in MS-Access with the referential integrity-foreign key.

Note: This is a tentative list; the teachers' concern can add more experiment as per requirement.

Keyw Information Technology (IT), Information and Communication Technology (ICT), G-Suite, MS Word, MS ords Excel, MS Power Point, MS-Access.

Signature of Cayvener & Members of CBoS:

Dr HS Flata K

(Sures L Tkaker)

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PART=C: Learning Resources

Text Books, Reference Books and Others

#### Text Books Recommended:

- Computer Fundamentals, P.K. Sinha, BPB Publication, Sixth Edition.
- · Fundamentals of Information Technology, Chetan Shrivastava, Kalyan Publishers.
- Fundamentals of Computers, V. Rajaraman, PHI Sixth Edition.
- Computer Fundamentals and Office Automation, Dr. Santosh Kumar Miri, Iterative International Publisher IIP.
- Computer Fundamentals Architecture and Organization, B. Ram, New Age International Publishers, Fifth Edition.
- · Fundamentals of Information Technology, Alexis Leon and Mathews Leon, Vikash Publication.

#### Reference Books Recommended:

- · Introduction to Information Technology, V. Rajaraman, PHI publication.
- Fundamental of IT, Leon and Leon, Leon Tec world.
- Introduction to Information Technology, Aksoy and Denardis, Cengage learning.
- · Computers Today, Suresh K. Basandra, Galgotia Publications.
- Information Technology The breaking wave, Dennis P.Curtin, Kim Foley, Kunai Sen and Cathleen Morin, TMH.
- OFFICE 2013 in Simple Steps, Kogent Solution Inc., DremTech Press.
- Access 2010 in Simple Steps by Kogent Learning Solutions Inc.

#### Online Resources:

- Introduction to Computer Fundamental from W3school: https://www.w3schools.blog/computer-fundamentals-tutorial
- Introduction to MS-Word from W3school:
  - https://www.w3schools.blog/ms-word-tutorial
- Introduction to MS-Excel from W3school;
  - https://www.w3schools.com/excel/excel introduction.php

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- Introduction to MS-PowerPoint from W3school: https://www.w3schools.blog/powerpoint-tutorial
- Introduction to MS-Access from W3school:

https://www.w3schools.com/sql/sql\_ref\_msaccess.asp

Fundamentals of Computers & Information Technology (in Hindi):

https://www.mcu.ac.in/wp-content/uploads/2020/04/1PGDCA1-Unit-I-Fundamentals-of-

Computers-Information-Technology.pdf.

Fundamentals of Computers & Information Technology (in Hindi):

https://hte.rajasthan.gov.in/dept/dte/board of technical education, rajasthan/government polyte chnic college hanumangarh/uploads/doc/fundamental- final-rkd.pdf.

Information and Computers

Technology: https://cbseacademic.nic.in/web\_material/doc/2014/11\_ICT-IX.pdf.pdf.

Microsoft Office (in Hindi):

https://www.scribd.com/document/534988849/9-Microsoft-office-in-hindi-www-GkNotesPDFcom.

MS-OFFICE:

https://www.rgycsm.org/uploads/books/MICROSOFT-OFFICE-BOOK.pdf.

MS-OFFICE:

Hindi Notes: https://www.copaguide.com/2020/04/ms-office-topics.html.

Microsoft Office Full Crash Course:

https://www.youtube.com/watch?v=SH4oyV5AJ6A

| Suggested Continuous E  | valuation Methods:   |  |
|---|--|--|
| Maximum Marks:  | 50 Marks   |  |
| Continuous Internal Ass<br>End Semester Exam (ES                | E): 35 Marks   | Colonia Tour   |
| Continuous Internal<br>Assessment (CIA):<br>(By Course Teacher) | Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar + Attendance - 05 Total Marks - 15  | Better marks out of the two Test /<br>Quiz + obtained marks in Assignme<br>shall be considered against 15 Mark |
| End Semester Exam (ESE):  | Laboratory / Field Skill Performance: On spot Assessment A. Performed the Task based on lab. wo B. Spotting based on tools & technology Viva-voce (based on principle/technology | rk - 20 Marks as per lab.<br>(written) - 10 Marks status   |

Name and Sanature of Convener & Members of CBoS;

(wrest theken)

Dr. H.57-1649

ANTETA KUJUR

Nandkuma ilaya, Raigarh (C

# FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28) DEPARTMENT OF INFORMATION TECHNOLOGY COURSE CURRICULUM

| PA  | ART  | F- A: Introduc  | ction   | E CURRICULU   |  | *******          |  |  |
|-----|--|---|---|---|--|------------------|--|--|
| Pr  | ogra   | ım: Bachelorin  | Science (IT)  | Commenter VI  | T  |                  |  |  |
| (Ce | 1  | cate / Diploma / De   | gree/Honors)  | Semester - II   | Session: 2024-20   | 025              |  |  |
| 1   | Co   | urse Code   | ITSC-02T  |   |  |                  |  |  |
| 2   | Co   | urse Title  | Programming in C+   | +   |  |                  |  |  |
| 3   | Co   | urse Type   | DSC (Discipline Spe   | ecific Course)  |  |                  |  |  |
| 4   | Pr   | erequisite  | As per program  |   |  |                  |  |  |
| 5   |  | ourse Learning.<br>atcomes (CLO)  | <ul> <li>Understand the</li> <li>Write programs</li> <li>Define function</li> <li>Write programs</li> </ul>   | se, the students will be a<br>fundamentals of object of<br>s related to concept of ob<br>as, class and to create ow<br>s for file handling,<br>programs to solve real | oriented programming.  ject oriented program  n Libraries.   |                  |  |  |
| 6   | Cr   | edit Value 3 Credits Credit = 15 Hours - Learning & Observation   |   |   |  |                  |  |  |
| 7   | To   | otal Marks  | Max. Marks:   | 100   | Min Passing Marks: 4   | 10               |  |  |
| ΡΑ  | RT   | -B: Conte   | nt of the Cours   | se  |  |                  |  |  |
|     | _  | Total No. of Tea  | ching=Eearning Per  | iods (01 Hr. per peri   | od) - 45 Periods (45 Ho  |                  |  |  |
| Uı  | nit  |   | Topics  | (Course contents  | )  | No. of<br>Period |  |  |
|     | ľ  | file, Executable file<br>Testing, Debuggin<br>Structure of C properators, Data T<br>Precedence and As<br>and User defined   | e, Header file, Languag<br>g, Linker and Loader, A<br>rogram, C Tokens:<br>ypes, Control structure<br>ssociativity, Array and<br>functions, function pro- | ge Translator- Assemble<br>Algorithms, Flow Charts<br>Identifiers, Keyword<br>Conditional and loop<br>its types, Pointer, Fund  | gram, Source file, Object<br>er, Interpreter, Compiler,<br>s, History of C language,<br>s, Constants, Variables,<br>ing statements, Operator<br>ctions: Standard Library<br>and Call by reference, | 12               |  |  |
| Ī   | 1  | Introduction to Object Oriented Programming: Concept of object oriented programming, Features of C++, Structure of C++ program, Data types, structure, class and objects, Access Specifiers: Private, Public, Protected, inline functions, static data and static functions. Constructor: Default constructor, Copy constructor, Parameterized constructor, |   |   |  |                  |  |  |
| Ī   | Destructor.  II Inheritance and Polymorphism: Definition, Concept of base and derived class, Types of Inheritance: Single, Multilevel, Multiple, Hierarchical and Hybrid Inheritance. Polymorphism: Definition, Compile time polymorphism: Function overloading, Operator overloading, constructor overloading, Runtime polymorphism: Virtual Function, pure |   |   |   |  | 11               |  |  |
| ľ   | V  | virtual function. Inline function, friend function, friend class.  Input-Output and File Handling: I/O classes, File and Stream classes, Char I/O, String I/O, Object I/O, File Pointer, Opening and Closing file.  Exception Handling and Standard Template Library: Definition, Exception basics, try, catch and throws keywords, Template.               |   |   |  |                  |  |  |
|     | ords   | Token, Identifier, K<br>Template.   | Keyword, Array, Functio   | n, Class, Object, Polymo  | orphism, Inheritance, Const  | ructor,          |  |  |
| الم | 11.5   | Hara Kus  | Jale V  | Ams Be  | That in Q  | AND              |  |  |

# PART-C: Learning Resources

Text Books, Reference Books and Others

## Text Books Recommended:

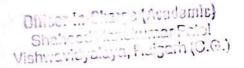
- Peter Juliff, Program Design, PHI Publications.
- Yashwant Kanetkar, Let us C: BPB Publications.
- E. Balaguruswamy, Programming in ANSI C, Tata McGraw Hill

## Reference Books Recommended:

- Y. Kanetkar, Let us C++, B.P.B Publication.
- E. Balaguruswamy, Programming in C++, Tata McGraw Hill.
- R. Kumar, Object Oriented Programming with C++, Prakhar Publication(Hindi)
- Dhupiya, Lakhyani, C++ Programming Alka Publications, Ajmer (Paperback, Dhupiya, Lakhyani)(Hindi)

#### Online Resources:

- Introduction to C and C++ from SWAYAM/NPTEL
   https://onlinecourses.nptel.ac.in/noc22\_cs103/preview
   https://www.youtube.com/watch?v=KG4hjVDw-p8&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=2
- Constant-and Inline Function through NPTEL:
   https://www.youtube.com/watch?v=pX6LufLso2M&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=10
- Pointer and Reference NPTEL https://www.youtube.com/watch?v=GtsBZ5e1-cE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=12
- Function Overloading NPTEL https://www.youtube.com/watch?v=uJGmGAShHeU&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=13
- Operator Overloading NPTEL https://www.youtube.com/watch?v=0jpOwe4d-FE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=17
- Dynamic Memory Management NPTEL https://www.youtube.com/watch?v=lkFK2X6qIc0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=18
- Class and Object NPTEL
   https://www.youtube.com/watch?v=wtuks\_f3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24
- Access Specifiers NPTEL
   https://www.youtube.com/watch?v=6ki\_W7cXdM0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=22
- Constructor and Destructor NPTEL
   https://www.youtube.com/watch?v=wtuks\_f3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24
- C++ different topics from W3School https://www.w3schools.com/CPP/default.asp
- C++ different topics from Javatpoint https://www.javatpoint.com/cpp-tutorial





PART -D: Assessment and Evaluation Suggested Continuous Evaluation Methods: Maximum Marks: 100 Marks Continuous Internal Assessment (CIA): 30 Marks End Semester Exam (ESE): 70 Marks Better marks out of the two Test / Quiz + Continuous Internal Internal Test / Quiz-(2): 20 +20 obtained marks in Assignment shall be Assignment / Seminar -Assessment (CIA): considered against 30 Marks Total Marks -30 (By Course Teacher) Two section - A & B End Semester Exam Section A: Q1. Objective - 10 x1= 10 Mark; Q2. Short answer type- 5x4 -20 Marks (ESE): Section B: Descriptive answer type qts., 1 out of 2 from each unit-4x10=40 Marks Name and Signature of Convener & Members of CBoS: Dr. Astrona check men ANJECTA

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Si Officer In-Charge (Adinbumle)
Vish Shalicod Candrumar Fold
Vishwavidyalaya, Ruigarh (O.G.)

# FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28) DEPARTMENT OF INFORMATION TECHNOLOGY COURSE CURRICULUM

|             |   | DEP  | ARTMENT OF COURS   | FINFORMATION T<br>SE CURRICULUI  | ECHNOLOGY   |                                       |  |  |
|-------------|---|--|--|--|---|---------------------------------------|--|--|
| PAI         | RT-   | : Introduc   |  |  |   |                                       |  |  |
|             |   | Bachelor in Sc<br>/ Diploma / Degr   |  | Semester - II  | Session: 2024-2   | :025                                  |  |  |
| ŧ           | Cou   | rse Code   | ITSC-02P   |  |   |                                       |  |  |
| 2           | Cou   | rse Title  | Lab 2: Progra  | mming in C++   |   |                                       |  |  |
| 3           | Cou   | rse Type   | Practical  |  |   | -                                     |  |  |
| 4           | Pre   | Prerequisite As per program  |  |  |   |                                       |  |  |
| 5           | Course Learning Outcomes (CLO)  Code. using Write Under alloca passir Devel |  |  | nd of this course, the students will be able to: iderstand the fundamental programming concepts and methods ich are essential to create good C++ programs. ide. test, and implement a well-structured, robust computer pr ing the C++ programming language. rite reusable modules (collections of functions). inderstand design/implementation issues involved with v ocation and binding, control flow, types, subroutines, par ssing. evelop an in-depth understanding of functional, logic, and iented programming paradigms. |   |                                       |  |  |
| 6           |   | edit Value   |  |  | nory or Field Learning  | Training                              |  |  |
| 7           |   | tal Marks  | Max. Marks   |  | lin Passing Marks:  | 20                                    |  |  |
| PAI         | RT-E  | 3: Content   |  |  |   |                                       |  |  |
|             |   | Total No. o  | learning-Traini  | ing/performance Period   | ds: 30 Periods (30 Hour   |                                       |  |  |
|             | dule  |  | Topics (Course contents)   |  |   | No. of<br>Period                      |  |  |
| Pra<br>Expe | st of<br>etical<br>criment  | <ol> <li>Write a progusing do – w</li> <li>Write a progusing do – w</li> <li>Write a progustatements.</li> <li>Write a progustatements.</li> </ol> | ram in C++ to fin<br>gram in C++ to fi<br>hile loop.<br>gram in C++ for v<br>gram in C++ for M | dition of two numbers und the biggest number better ind the factorial value of various arithmetic operations of two 3X3 ore five books of informations.  | tween two numbers.  If any entered number tions using switch case matrices. | Charles and the state of the state of |  |  |

7. Write a program in C++ to store six employee information using union. 8. Write a program in C++ to calculate simple interest using call by value and call by reference method. 9. Write a program in C++ to find the sum and average of five numbers using 30 class and objects. 10. Write a program in C++ to multiply two numbers using private and public member functions. 11. Write a program in C++ to print structure like this using scope resolution operator 12 123 1234 12345 12. Write a program in C++ for constructor and Destructor. 13. Write a program in C++ for multiple inheritance.

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14. Write a program in C++ for operator overloading. 15. Write a program in C++ for friend class and friend function. 16. Write a program in C++ for virtual function and virtual class. 17. Write a program in C++ for Exception Handling. 18. Write a program in C++ to open and close a file using file Handling. 19. Given two ordered arrays of integers, write a program to merge the two-arrays to get an ordered array. 20. WAP to display Fibonacci series (i) using recursion, (ii) using iteration 21. WAP to calculate Factorial of a number (i) using recursion, (ii) using 22. WAP to calculate GCD of two numbers (i) with recursion (ii) without recursion. 23. Create a Matrix class using templates. Write a menu-driven program to perform following Matrix Operations (2-D array implementation): a) Sum b) Difference c) Product d) Transpose 22. Create the Person class. Create some objects of this class (by taking information from the user). Inherit the class Person to create two classes Teacher and Student class. Maintain the respective information in the classes and create, display and delete objects of these two classes (Use Runtime Polymorphism). 24. Create a class Triangle. Include overloaded functions for calculating area. Overload assignment operator and equality operator. 25. Create a class Box containing length, breadth and height. Include following methods in it: a) Calculate surface Area b) Calculate Volume c) Increment, Overload ++ operator (both prefix & postfix) d) Decrement, Overload -operator (both prefix & postfix) e) Overload operator == (to check equality of two boxes), as a friend function f) Overload Assignment operator g) Check if it is a Cube or cuboid 26. Create a structure Student containing fields for Roll No., Name, Class, Year and Total Marks. Create 10 students and store them in a file. 27. Write a program to retrieve the student information from the file created in the previous question and print it in the following format: Roll No. Name 28. Copy the contents of one text file to another file, after removing all whitespaces. 29. Write a program for exception handling. 30. Write a program to insert data into file and to display it. Note: Concerned teacher can add additional practical exercises as per requirement. Array, Function, Structure, union, matrix, constructor, destructor, inheritance. Keywords Signature of Convener & Members of CBoS: (Chairman Learning Resources Text Books, Reference Books and Others Text Books Recommended: Peter Juliff, Program Design, PHI Publications. Yashwant Kanetkar, Let us C: BPB Publications. E. Balaguruswamy, Programming in ANSI C, Tata McGraw Hill Reference Books Recommended:

E. Balaguruswamy, Programming in C++, Tata McGraw Hill. Office: La Charos (Academie) Shahoodi tanulamar Falid Vishvicricyalaya, Fielgath (O.C.)

Y. Kanetkar, Let us C++, B.P.B Publication .

- R. Kumar, Object Oriented Programming with C++, Prakhar Publication(Hindi)
- Dhupiya, Lakhyani , C++ Programming Alka Publications, Ajmer (Paperback, Dhupiya, Lakhyani)(Hindi)

#### Online Resources:

- Introduction to C and C++ from SWAYAM/NPTEL https://onlinecourses.nptel.ae.in/noc22\_cs103/preview https://www.youtube.com/watch?v=KG4hjVDw-p8&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=2
- Constant and Inline Function through NPTEL: https://www.youtube.com/watch?v=pX6LuILso2M&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNe6D2&index=10
- Pointer and Reference NPTEL https://www.youtube.com/watch?v=GtsBZ5e1-cE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=12
- Function Overloading NPTEL https://www.youtube.com/watch?v=uJGmGAShHeU&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=13
- Operator Overloading NPTEL https://www.youtube.com/watch?v=0jpOwe4d-FE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=17
- Dynamic Memory Management NPTEL https://www.youtube.com/watch?v=lkFK2X6qlc0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=18
- Class and Object NPTEL https://www.youtube.com/watch?v=wtuks\_GvP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24
- Access Specifiers NPTEL https://www.youtube.com/watch?v=6ki\_W7cXdM0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=22
- Constructor and Destructor NPTEL https://www.youtube.com/watch?v=wtuks\_f3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24
- C+++ different topics from W3School https://www.w3schools.com/CPP/default.asp
- C++ different topics from Javatpoint https://www.javatpoint.com/cpp-tutorial

| Suggested Continuous  | Evaluation Methods:  |   |
|---|--|---|
| Maximum Marks:  | 50 Marks   |   |
| Continuous Internal A<br>End Semester Exam (                    |  |   |
| Continuous Internal<br>Assessment (CIA):<br>(By Course Teacher) | Internal Test / Quiz-(2): 10 & 10<br>Assignment/Seminar + Attendance - 05<br>Total Marks - 15                  | Better marks out of the two Test / Quiz     obtained marks in Assignment shall be considered against 15 Marks |
| End Semester Example (ESE):                                     | A. Performed the Task based on lab. B. Spotting based on tools & technol C. Viva-vdce (based on principle/tect | ogy (written) – 10 Marks   Course teacher   as per lab.   |

Dr. MS. Hota Ka Charman

# FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28) DEPARTMENT OF INFORMATION TECHNOLOGY COURSE CURRICULUM

|   |     |   | Cour   | SE CURRICULUM  |  |          |  |
|---|-----|---|--|--|--|----------|--|
| P   | ART | - A: Introdu  | uction   |  |  |          |  |
|   |     | m: Bachelor in Sc<br>ate / Diploma / De   | 100  | Semester - 1   | Session: 2024-202  | .5       |  |
|   |     | rse Code  | ITGE-01T   | deres year and the man materials in the second of the seco |  |          |  |
| 2   | Cor | rse Title   | Fundamental of   | IT and MS-Office   |  |          |  |
| 3   |     | rrse Type   |  | Generic Elective)  |  |          |  |
| 4   |     | requisite   | As per program   | A  |  |          |  |
| 5   | Cı  | urse Learning.<br>tcomes (CLO)  | Develop information technology solutions by evaluating user require in advance trends of IT.     Acquire knowledge of MS-Excel, MS-PowerPoint and MS-Access.  edit Value  3 Credits  Credit = 15 Hours - Learning & Observation  3 Credits  Credit = 15 Hours - Learning & Observation             |  |  |          |  |
| 7   |     | tal Marks   | Max. Marks:  | 100  | 1  |          |  |
| P   | ART | -B: Conter  | nt of the Cou  | Projects (01 Hr. per D   | eriod) - 45 Periods (45 Ho   | urs)     |  |
| PART -B: Content of the Course  Total No. of Teaching-Learning Periods (01 Hr. per period) - 45 Periods (45  Topics (Course contents) |     |   |  | 4  | No. 0  |          |  |
| Unit I  |     | Historical eviden Katapayadi system and numerical ma Introduction to C Anatomy of Coneach Unit, Memory System Software Language, Assedisadvantages, Language, Assedisadvantages, Language, Assedisadvantages, Language, | ce, Salient aspect m, pingala and the athematics. Computer: History nputer: Block Diag ory: Primary, Cac and Application So embly Language, anguage Processor Information Tec. What is ICT?, C ds in IT: Cloud Te Virtual Reality, Machine Learning i initiatives in high sitory, National Di TEL. | binary system, Sulbha so of computer, Generation gram, Central Processing the, Flash, Software and oftware, Types of Program, High Level Languages/Translators: Assemble thrology: Data and Infomponents of ICT, Impact Components of India, Internet grant Components of India, Edital Library of India, Edital Librar | of Things (IoT), Artificial ag, Quantum Computing, G-1, Swayam Prabha, National S-Sodh-Sindhu, Virtual labs  | 12       |  |
|   |     | new document<br>Setting fonts, Pa<br>Heading2, Title<br>special. Insert T<br>Art, Equation an<br>(indent and space  | r, Saving documents agraph settings, Strong), Find of Tab: Pages, Tables d Symbols. Page I ing). Mailing Tab   | Various styles (Norma & Replace, Format pais, Pictures, Clipart, Sha ayout Tab: Page setup,  | and its features, Creating ng documents. Home Tab I, No spacing, Heading I inter, Copy paste and paste pes, Header & Footer, Word Page Background, Paragraph Labels, Mail Merge. Review otect document, View Tab Switch window). | 11<br>11 |  |

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Vishvævidyaleya, Flatgerh (C.G.)

MS-Excel: Introducing Excel, Use of Excel sheet, creating new sheet, Saving, Opening, III and Printing workbook. Home Tab: Font, Alignment, Number, Styles and cells and editing, Conditional Formatting. Insert Tab: Table, Charts (column chart, Pie chart, Bar chart, Line chart) and Texts (header & footer, word art, signature line). Page Layout Tab: Page setup options, Scale to fit (width, height, scale). Formulas Tab: Auto sum (sum, 11 average, min, max), Logical (IF, and, or, not, true, false), Math & Trig (sin, cos, tan, ceiling, floor, fact, mod, log), Sort and Filter options, Data validation, Group and ungroup. Review Tab: Protect sheet, Protect workbook, and Share workbook. View Tab: Page breaks, Page layout, Freezing Panes, Split and hide. IV Working with PowerPoint and MS-Access PowerPoint: Introducing PowerPoint, Use of PowerPoint presentation, Creating new slides saving, Opening and printing. Home Tab: New slide, Layout, Reset, Delete, Setting text direction, Align text, Convert to smart art, Drawing options. Insert Tab: Table, Picture, Clipart, Photo album, Smart art, Shapes and chart, Movie and sound, Hyperlink and action, Text box, Word art, Object. Design Tab: Page setup options, Slide orientation, Applying various themes, Selecting background style and formatting it. 11 Animations Tab: Custom animation for entrance, Exit and emphasis, Applying slide transition, Setting transition speed and sound, Animation on rehearse timing. Slideshow & View Tab: Start slide, Show options, and Setup options. View tab: Presentation views, Colors and Window option. MS-Access: Introduction to DBMS, features of DBMS, creating blank databases, Saving it in accelb format, Defining data type in MS Access, Creating tables, creating Information Technology (IT), Information and Communication Technology (ICT), G-Suite, MS Word, reports, query wizard. MS Excel, MS Power Point, MS-Access. Name and Signature of Convener & Members of CBoS.

# PART-C: Learning Resources

Text Books, Reference Books and Others

## Text Books Recommended:

- Computer Fundamentals, P.K. Sinha, BPB Publication, Sixth Edition.
- Fundamentals of Information Technology, Chetan Shrivastava, Kalyan Publishers.
- Fundamentals of Computers, V. Rajaraman, PHI Sixth Edition.
- Computer Fundamentals and Office Automation, Dr. Santosh Kumar Miri, Iterative International Publisher IIP.
- Computer Fundamentals Architecture and Organization, B. Ram, New Age International Publishers, Fifth Edition.
- Fundamentals of Information Technology, Alexis Leon and Mathews Leon, Vikash Publication.

### Reference Books Recommended:

- Introduction to Information Technology, V. Rajaraman, PHI publication.
- Fundamental of IT, Leon and Leon, Leon Tec world.
- Introduction to Information Technology, Aksoy and Denardis, Cengage learning.
- Computers Today, Suresh K. Basandra, Galgotia Publications.

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- Information Technology The breaking wave, Dennis P.Curtin, Kim Folcy, Kunai Sen and Cathleen Morin, TMH.
- OFFICE 2013 in Simple Steps, Kogent Solution Inc., DremTech Press.
- Access 2010 in Simple Steps by Kogent Learning Solutions Inc.

### Online Resources:

- Introduction to Computer Fundamental from W3school: https://www.w3schools.blog/computer-fundamentals-tutorial
- Introduction to MS-Word from W3school: https://www.w3schools.blog/ms-word-tutorial
- Introduction to MS-Excel from W3school: https://www.w3schools.com/excel/excel introduction.php
- Introduction to MS-PowerPoint from W3school: https://www.w3schools.blog/powerpoint-tutorial
- Introduction to MS-Access from W3school: https://www.w3schools.com/sql/sql\_ref\_msaccess.asp
- Fundamentals of Computers & Information Technology (in Hindi): https://www.mcu.ac.in/wp-content/uploads/2020/04/1PGDCA1-Unit-I-Fundamentals-of-Computers-Information-Technology.pdf.
- Fundamentals of Computers & Information Technology (in Hindi): https://hte.rajasthan.gov.in/dept/dte/board of technical education. rajasthan/government poly technic college hanumangarh/uploads/doc/fundamental- final-rkd.pdf.
- Information and Computers Technology: https://ebseacademic.nic.in/web\_material/doc/2014/11\_ICT-IX.pdf.pdf.
- Microsoft Office (in Hindi): https://www.scribd.com/document/534988849/9-Microsoft-office-in-hindi-www-GkNotesPDFcom.
- MS-OFFICE: https://www.rgycsm.org/uploads/books/MICROSOFT-OFFICE-BOOK.pdf.
- MS-OFFICE: Hindi Notes: https://www.copaguide.com/2020/04/ms-office-topics.html.
- Microsoft Office Full Crash Course:

Vishv.avidyalaya, Hulgath (C.G.)

| <ul> <li>Microsoft Office Find the Microsoft Office Find the Micro</li></ul> | be.com/watch?v=SH4oyV5AJ6A  |   |
|--|---|---|
| PART -D: Assess  | sment and Evaluation  |   |
| Suggested Continuous I<br>Maximum Marks:<br>Continuous Internal As   | 100 Marks   |   |
| End Semester Exam (E   | ,0000,  |   |
| Continuous Internal<br>Assessment (CIA):<br>(By Course Teacher)  | Internal Test / Quiz-(2): 20 +20 Assignment / Seminar - 10 Total Marks - 30 | Better marks out of the two Test / Quiz obtained marks in Assignment shall be considered against 30 Marks |
| Evam (ESE). Sec  |   | rk; Q2. Short answer type- 5x4 =20 Marks out of 2 from each unit-4x10=40 Marks                            |
|  | Convener & Members of CBoS:   | Sal Suli ANJECTA K  |
|  | Smill prop Ill  | Jechalin San Allen  |

# FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28) DEPARTMENT OF INFORMATION TECHNOLOGY COURSE CURRICULUM

|   | ADT A. I.A.  | Course   | SORRICOLOM   | No. the second service of the first to be hard to be a second service of the first to be a first to |        |
|---|--|--|--|---|--------|
| P | ART- A: Intro<br>rogram: Bachelor in<br>Pertificate / Diploma /  | Science (II)   | Semester - 1   | Session: 2021-2   | 025    |
| 1 | Course Code  | ITGE-01P   |  | L   |        |
| 2 | Course Title   | Lab 1: MS-Office   |  |   |        |
| 3 | Course Type  | Practical  |  |   |        |
| 1 | Prerequisite   | As per program   | and the second s |   |        |
| 5 | Course Learning.<br>Outcomes (CLO)   | Gain Practical kn     Organize files an     Acquire knowled     Develop informal advance trends of     Acquire knowled   | ge of MS-Excel, MS-Power   | ices.<br>ications.<br>evaluating user require<br>Point and MS-Access.   |        |
| 6 | Credit Value   | 1 Credits Credit =:  | 30 Hours Laboratory or 1   | Field Learning/Train  | ning   |
| 7 | Total Marks  | Max.<br>Marks: 50  | Min Passing Marks  | s: 20   |        |
|   | Spam and Tras  2. How to design  | Google form? Write the s   | Write the uses of Inbox, S   |   | 30 Hrs |
|   | <ul> <li>4. How do teach Classroom?</li> <li>5. How do studen</li> <li>6. How to use soc</li> <li>7. How to use soc</li> <li>8. How to use Good</li> </ul> | different student classes in ers create assignments a ts find assignments, due dial media platforms like to tal media platforms like Fogle spreadsheets, Google files between mobile | n Google classroom.  and provide due dates, clates, or grades in Google witter, Facebook and You Flickr, Skype, yahoo and Estides and Google form  | or grades in Google c Classroom? aTube? WhatsApp? s?  |        |

Officer In-Charge (Academic) Shaheed Nandhumar Petel Vishwevidyalaya, Fielgath (C.G.)



Leave a gap of 12-points after the title.

2. Create a telephone directory,

The heading should be16-point Arial Font in bold.

The rest of the document should use10-point font size.

Other headings should use10-point Courier New Font.

The footer should show the page number as well as the date last updated.

3. Design a time-table form for your college.

- The first line should mention the name of the collegein 16-point Arial Font and should be bold.
- The second line should give the course name/teacher's name and the department in 14-point Arial.

Leave a gap of 12-points.

> The rest of the document should use10-point Times New Roman font.

- > The footer should contain your specifications as the designer and date of creation.
- XYZ Publications plan store lease an e-book design dapper your syllabus. Design the First page of the book as per the given specifications.

The title of the book should appearinboldusing20-pointArialfont.

> The name of the author and his qualifications should be in the center of the page in 16-point Arial font.

At the bottom of the document should be the name of the publisher and address in 16-point Times New Roman.

The details of the offices of the publisher (only location) should appear in the footer.

5. Create the following one page documents.

- > Compose a note inviting friends together at your house, including a list of things to bring with them.
- Design a certificate in landscape orientation with a border around the document.

> Design a Garage Sale sign.

Make an assignment outlining your rules for your bedroom at home, using a numbered list.

6. Create the following documents:

- A newsletter with a headline and 2 columns in portrait orientation, including at least one image surrounded by text.
- Use a newsletter format to promote upcoming projects or events in your classroom or college.
- Convert following text to a table, using comma as delimiter Type the following as shown (do not bold).

Color, Style, Item Blue, A980, Van Red, X023, Car Green, YL724, Truck Name, Age, Sex Bob, 23, M Linda, 46, F Tom, 29, M

8. Enter the following data into a table given on the next page.

300000

| Salesperson     | Dolls | Trucks | Puzzles |
|-----------------|-------|--------|---------|
| Kennedy, Sally  | 1327  | 1423   | 1193    |
| White, Pete     | 1421  | 3863   | 2934    |
| Pillar, James   | 5214  | 3247   | 5467    |
| York, George    | 2190  | 1278   | 1928    |
| Banks, Jennifer | 1201  | 2528   | 1203    |
| Atwater, Kelly  | 4098  | 3079   | 2067    |
| Pillar, James   | 5214  | 3247   | 5467    |
| York, George    | 2190  | 1278   | 1928    |
| Banks, Jennifer | 1201  | 2528   | · 1203  |
| Atwater, Kelly  | 4098  | 3079   | . 2067  |

Add a column Region (values: S, N, N, S, S, S) between the Salesperson and Dolls columns to the given table Sort your table data by Region and within Region by Sales person in ascending order:

In this exercise, you will add a new row to your table, place the word Total at the bottom of the Sales person column, and sum the Dolls, Trucks, and Puzzles

- 9. Wrapping of-text around-the-image.
- 10. How to install MS-Office in Windows operating system.
- 11. How to convert word, excel and PowerPoint into pdf & pdf to word.
- 12. How to merge and split pdf files.

### MS-Excel

1. Enter the Following data in Excel Sheet

| 1/2/10/2007 | Otal | Qtr2 | Qtr3 | ES PROJE<br>Qtr4 | Qtr Total | Rate Amoun |
|-------------|------|------|------|------------------|-----------|------------|
| State       | Qtrl | -    | 2100 | 3000             | 15        | 1          |
| Delhi       | 2020 | 2400 |      | 1400             | 20        |            |
| Punjab      | 1100 | 1300 | 1500 | 2800             | 17        |            |
| U.P.        | 3000 | 3200 | 2600 |                  | 15        |            |
| Haryana     | 1800 | 2000 | 2200 | 2700             |           |            |
| Rajasthan   | 2100 | 2000 | 1800 | 2200             | 20        |            |
| TOTAL       |      |      |      |                  |           |            |
| AVERAGE     |      |      |      |                  |           |            |

a. Apply Formatting as follow:

Title in TIMES NEW ROMAN

FontSize-14

Remaining text-ARIAL, FontSize-10

State name and Qtr. Heading Bold, Italic with Gray Fill Color.

Numbers in two decimal places.

Qtr. Heading in center Alignment.

Apply Border to whole data.

- b. Calculate State and Qtr. Total
- Calculate Average for each quarter

Officer to Charge (Avademic) Sheheed Hanckumar Pakel Vishwavid, alaya, Reigarh (O.G.)



- d. Calculate Amount=Rate\*Total.
- 2. Given the following worksheet

| A |          | В         | С     | D     |
|---|----------|-----------|-------|-------|
| 1 | Roll No. | Name      | Marks | Grade |
| 2 | 1001     | Sachin    | 99    |       |
| 3 | 1002     | Sehwag    | 65    |       |
| 4 | 1003     | Rahul     | 41    |       |
| 5 | 1004     | Sourav    | 89    |       |
| 6 | 1005     | Harbhajan | 56    |       |

Calculate the grade of these students on the basis of following guidelines:

| If Marks      | Then Grade |
|---------------|------------|
| >=80          | A+         |
| >= 60 and <80 | Α          |
| >= 50 and <60 | В          |
| <50           | F          |

3. Given the following worksheet

|   | A        | В    | С    | D         | E     | F_    | G          |
|---|----------|------|------|-----------|-------|-------|------------|
| 1 | Salesman |      | Sa   | les in(Rs | .)    |       |            |
| 2 | No.      | Qtr1 | Qtr2 | Qtr3      | Qtr4  | Total | Commission |
| 3 | S001     | 5000 | 8500 | 12000     | 9000  |       |            |
| 4 | S002     | 7000 | 4000 | 7500      | 11000 |       |            |
| 5 | S003     | 4000 | 9000 | 6500      | 8200  |       |            |
| 6 | S004     | 5500 | 6900 | 4500      | 10500 |       |            |
| 7 | S005     | 7400 | 8500 | 9200      | 8300  |       |            |
| 8 | S006     | 5300 | 7600 | 9800      | 6100  |       |            |

Calculate the commission earned by the salesman on the basis of following Candidates:

| If Total Sales      | Then Commission |
|---------------------|-----------------|
| <20000              | 0% of sales     |
| > 20000 and < 25000 | 4% of sales     |
| > 25000 and < 30000 | 5.5% of sales   |
| > 30000 and < 35000 | 8%of sales      |
| >=35000             | 11% of sales    |

The total sales are the sum of sales of all the four quarters.

- 4. Company XYZ Ltd. pays a monthly salary to its employees who consist of basic salary, allowances & deductions. The details of allowances and deductions are as follows:
  - HRA Dependent on Basic
     30% of Basic if Basic<=1000</li>
     25% of Basic if Basic>1000 & Basic<=3000</li>
     20% of Basic if Basic>3000
  - DA Fixed for all employees,30% of Basic
  - Conveyance Allowance(CA)





Rs.50/- if Basic is <=1000

Rs.75/- if Basic > 1000 & Basic <= 2000

Rs.100 if Basic>2000

Entertainment Allowance (EA)

NIL if Basic is<=1000

Rs.100/-if Basic > 1000

#### Deductions

 Provident Fund 6% of Basic

• Group Insurance Premium

Rs.40/-if Basic is <=1500

Rs.60/-if Basic > 1500 & Basic <= 3000

Rs.80/-if Basic>3000

Calculate the following:

Gross Salary=Basic +HRA+ DA+ CA+ EA

Total Deduction=Provident Fund + Group Insurance Premium

Net Salary=Gross Salary-Total Deduction

5. Create Payment Table for a fixed Principal amount, variable rate of interests and time in the form at below:

|         |          |                         |    | 1  |
|---------|----------|-------------------------|----|----|
| 5%      | 6%       | 7%                      | 8% | 9% |
| XX      | XX       | XX                      | XX | XX |
| XX      | XX       | XX                      | XX | XX |
| 2000000 | XX       | XX                      | XX | XX |
|         | XX       | XX                      | XX | XX |
|         | 10000000 | XX XX<br>XX XX<br>XX XX | XX | XX |

6. Use an array formula to calculate Simple Interest for given principal amounts given the rate of Interest and time

| 8%              |
|-----------------|
| 5Years          |
| Simple Interest |
| ?               |
| ?               |
| ?               |
|                 |

7. The following table gives a year wise sale figure of five salesmen in Rs.

| 2019 | 2020  | 2021  | 2022   |
|------|---|---|--|
|      | 12000   | 20000   | 50000  |
|      | 18000   | 50000   | 60000  |
|      | 22000   | 70000   | 70000  |
|      |   | 100000  | 80000  |
|      | 45000   | 125000  | 90000  |
|      | 2019<br>10000<br>15000<br>20000<br>30000<br>40000 | 10000     12000       15000     18000       20000     22000       30000     30000 | 10000         12000         20000           15000         18000         50000           20000         22000         70000           30000         30000         100000 |

- a. Calculate total sale year wise.
- b. Calculate the net sale made by each salesman
- c. Calculate the maximum sale made by the salesman
- d. Calculate the commission for each salesman under the condition.

Office: La Charge (Avademic) Sheirest Lembrumer Petel Vishvisvis, alaya, Luigath (C.G.) Story (C)

- >> If total sales > 4, 00,000 give 5% commission on total sale made by the salesman.
- >> Otherwise give 2% commission.
- c. Draw a bar graph representing the sale made by each salesman.
- f. Draw a pie graph representing the sale made by a salesman in 2000.
- 8. Enter the following data in Excel Sheet

PERSONAL BUDGET FOR FIRST QUARTER

Monthly Income(Net): 1,475

| EXPENSES        | JAN    | FEB    | MARCH<br>QUARTER<br>TOTAL | QUARTER<br>AVERAGE |
|-----------------|--------|--------|---------------------------|--------------------|
| Rent            | 600.00 | 600.00 | 600:00                    |                    |
| Telephone       | 48.25  | 43.50  | 60.00                     |                    |
| Utilities       | 67.27  | 110.00 | 70.00                     |                    |
| Credit Card     | 200.00 | 110.00 | 70.00                     |                    |
| Oil             | 100.00 | 150.00 | 90.00                     |                    |
| AV to Insurance | 150.00 |        |                           |                    |
| Cable TV        | 40.75  | 40.75  | 40.75                     |                    |
| Monthly Total   |        |        |                           |                    |

- a. Calculate Quarter total and Quarter average.
- b. Calculate Monthly total.
- c. Surplus=Monthly income-Monthly total.
- d. What would be the total surplus if monthly income is 1500.
- e. How much does the telephone expense for March differ from quarter average?
- f. Create a 3D column graph for telephone and utilities.
- g. Create a pie chart for monthly expenses.
- 9. Enter the following data in Excel Sheet

## TOTAL REVENUE EARNED FOR SAM'S BOOK STALL

| Publisher Name                                | 1997         | 1998        | 1999         | 2000          | Total |
|---|--------------|-------------|--------------|---------------|-------|
| - Santa Carried and The Carried Broken Street | Rs. 1,000.00 | Rs. 1100.00 | Rs. 1,300.00 | Rs. 800.00    | 1     |
| В   | Rs. 1,500.00 | Rs. 700.00  | Rs. 1,000.00 | Rs. 2,000.00  |       |
| С   | Rs. 700.00   | Rs. 900.00  | Rs. 1,500.00 | Rs. 600.00    |       |
| D   | Rs. 1,200.00 | Rs. 500.00  | Rs. 200.00   | Rs. 1,100.00. |       |

- a) Compute the total revenue earned.
- b) Plot the line chart to compare the revenue of all publishers for 4 years.
- c) Chart Title should be Total Revenue of Sam's Book stall(1997-2000)'
- d) Give appropriate categories and value axis title.
- Generate 25 random numbers between 0 & 100 and find their sum, average and count. How many no. are in the range 50-60.

#### MS-Power Point

- 1. Do the following task:
  - · Start a new blank presentation
  - · Your first Slide is going to be a Title Slide
  - Write the Text as in the preview below:

Ohruchia: filminata (Avarlamis) Shahadi Kamukumar Fe'al Vishvavlayalaya, Falgarh (C.C.) Blog Palel

- >> If total sales > 4, 00,000 give 5% commission on total sale made by the salesman.
- >> Otherwise give 2% commission.
- e. Draw a bar graph representing the sale made by each salesman.
- f. Draw a pie graph representing the sale made by a salesman in 2000.
- 8. Enter the following data in Excel Sheet

#### PERSONAL BUDGET FOR FIRST QUARTER

Monthly Income(Net): 1,475

| EXPENSES        | JAN    | FEB    | MARCH<br>QUARTER<br>TOTAL | QUARTER<br>AVERAGE |
|-----------------|--------|--------|---------------------------|--------------------|
| Rent            | 600.00 | 600.00 | 600.00                    |                    |
| Telephone       | 48.25  | 43.50  | 60.00                     |                    |
| Utilities       | 67.27  | 110.00 | 70.00                     |                    |
| Credit Card     | 200.00 | 110.00 | 70.00                     |                    |
| Oil             | 100.00 | 150.00 | 90.00                     |                    |
| AV to Insurance | 150.00 |        |                           |                    |
| Cable TV        | 40.75  | 40.75  | 40.75                     |                    |
| Monthly Total   |        |        |                           |                    |

- a. Calculate Quarter total and Quarter average.
- b. Calculate Monthly total.
- c. Surplus=Monthly income-Monthly total.
- d. What would be the total surplus if monthly income is 1500.
- e. How much does the telephone expense for March differ from quarter average?
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- 9. Enter the following data in Excel Sheet

# TOTAL REVENUE EARNED FOR SAM'S BOOK STALL

| Publisher Name | 1997         | 1998        | 1999         | 2000          | Total |
|----------------|--------------|-------------|--------------|---------------|-------|
|                | Rs. 1,000.00 | Rs. 1100.00 | Rs. 1,300.00 | Rs. 800.00    |       |
| В              | Rs. 1,500.00 | Rs. 700.00  | Rs. 1,000.00 | Rs. 2,000.00  |       |
| C              | Rs. 700.00   |             | Rs. 1,500.00 | Rs. 600.00    |       |
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- c) Chart Title should be Total Revenue of Sam's Book stall(1997-2000)
- d) Give appropriate categories and value axis title.
- Generate 25 random numbers between 0 & 100 and find their sum, average and count. How many no. arc in the range 50-60.

#### MS-Power Point

- 1. Do the following task:
  - Start a new blank presentation
  - Your first Slide is going to be a Title Slide
  - Write the Text as in the preview below:

Blog Parc

o Lighthouse Co Ltd

o Make the Font of "Lighthouse" Arial Black and size 88

- Insert a second slide this should be with a layout of Bulleted List
- Write the Text as in preview below
- [Title]: Lighthouse Co Ltd
- [Body]:
  - Mission Statement i.
  - Company Objectives ii.
  - Management Team iii.
  - Employees iv.
  - Sales V.

Make the Font Color of the Points to Green

Insert a third slide that should be an Organization Chart.

Include the following people in the chart:

- a. David Brent, General Manager
- b. Tim Canterbury, Head of Sales
- c. Gareth Keenan, Assistant to the General Manager
- d. Dawn Tinsley, Human Resources Manager

Add a fourth slide and this should be a Table Chart.

The chart should look like the following:

| rt should look like the following | Disco                |
|-----------------------------------|----------------------|
| New Products                      | Omm Cameras          |
| Digital Cameras                   | 8x Zoom Video Camera |
| Tiltra Slim Video oum             | Black and White TVs  |
| 25" Plasma TVs21"                 | Video Players        |
| DVD Recorders                     | 1 storeo systems     |
| 7 1 Dolby Surround Systems        | 2 channel stere      |

Make the titles New Products and Discontinued Products with a shadow effect and

centered in the cell. Widen columns to fit Text as above. The Fifth slide should be a Chart slide. The chart should be a bar chart, and include

the following data must be used to form the chart:

| owing data must b                 | January | February | March | April |
|-----------------------------------|---------|----------|-------|-------|
|                                   |         | 27       | 90    | 75    |
| TVs                               | 30      | 38       | 34    | .31   |
| DVDs                              | 45      | 46       | 45    | 43    |
| Wifi equipment<br>Video Recorders | 25      | 29       | 15    | 40    |

- Change the colours of the chart so that the series of bars are red, yellow, pink, and
- Add a light coloured background to all slides in the presentation.
- Add also Transition effects between each slide and also different effects for all text and pictures in the presentation.
- Reverse the order of the second and third slides
- Save the presentation as Light House Ltd.
- Do the following:

Load your Presentation Application and start a new presentation

- The first slide is a Title Slide. Select the appropriate layout and enter the title: Annual Food Fair
- Add the subtitle: .A Celebration of Eating
- Insert a small, red circle at the bottom right of the title slide.

Officer in Charge (Auadamic) Shaliped Landlumar Feloi Vishvravicyalcya, Reigarh (O.G.)

- Change the font color for the whole title and subtitle to blue, and apply a text shadow effect just to the words Food and Fair
- Insert a second slide to the presentation, selecting a layout appropriate for a series of bullet points, and using the title: The Menu. Enter the following text:
  - i. Chocolate Desserts
  - ii. Cakes and Puddings
  - iii. Roast Meals
  - iv. Using Pasta Creatively
- Change the line spacing for these bullet points to 1.5 lines.
- Increase the font size for the words The Menu in the title.
- Add a footer with your name and the text: Food Fair so they both appear on every slide, and number all the slides. (Make sure the number is not obscured by the red
- Insert a third slide, which is to be an organization chart. Use the title Meet The Team. Enter: Maggie Peet, Manager at the top of the chart, and show the following three as reporting to Maggie Peet: Brian Webb, Bookings; Janine Newton, Publicity; Gregg Brown, Accounts
- Embolden the text in the title of the third slide, and change the font to Arial.
- Apply a light coloured background to all the slides in the presentation
- On the third slide, insert an image suitable for the topic of food from an image library. Reduce the size of the image and place it where it will not interfere with
- Save the presentation as foodfair.
- Print the presentation with three slides per page, and close the presentation.
- 3. Do the followings:
  - Load your Presentation Application and start a new presentation
  - The first slide is a Title Only Slide. Select the appropriate layout and enter the title: Cook Family Cruises.
  - Add a small blue rectangle at the top left of this slide.
  - Change the font color for the whole title to red, and apply a text shadow effect just
  - Insert a second slide to the presentation, selecting a layout appropriate for a series of bullet points, and using the title: Our Itinerary. Enter the following text:
    - Canary Islands
    - Mediterranean b.
    - Greek Islands
  - Change the line spacing for these bullet points to 2 lines. Increase the font size of the word Itinerary in the title. Add a footer with your name and the text: Cruise Information so they both appear on every slide, and number all the slides.
  - Insert a third slide, which is to be a graph. Use the title Our Market Share. Use the following data to produce a pie chart: Cook 54%; Jackson 28%; Wilson 12%; Bennett 5%
    - Embolden the text in the title of the third slide, and change the font to Arial.
  - Apply a different background to each slide in the presentation.
  - On the third slide, insert an image suitable for the topic of holidays from an image library. Reduce the size of the image and place it where it will not interfere with
  - Add a 4-slide containing nothing but the text: Travel with us for less!!
  - Save the presentation as a holiday.
  - Print the presentation with 4 slides per page, and close the presentation.
- 4. Creating an animation looks like the leaf is falling in a tree.



5. Creating an animation looks like demolishing a world trade center in America.

#### MS-Access

- Create a database named "college" and perform the following tasks:
  - A. Create a table named "student" having following fields: Class, Roll no and Name with these Information i.e., Field Name, Data type and Description
  - B. Fill at least 5 records.
  - C. Prepare a query to display all records and Name should be in ascending order.
- 2. Create the employee table in MS-Access with the referential integrity-foreign key.

Note: This is a tentative list; the teachers' concern can add more experiment as per

Keyw Information Technology (IT), Information and Communication Technology (ICT), G-Suite, MS Word, MS ords Excel, MS Power Point, MS-Access.

Name and Signature of Convener & Members of CBoS:

KUJUR

#### Learning Resources PART-C:

Text Books, Reference Books and Others

## Text Books Recommended:

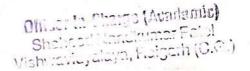
- Computer Fundamentals, P.K. Sinha, BPB Publication, Sixth Edition.
- Fundamentals of Information Technology, Chetan Shrivastava, Kalyan Publishers.
- Fundamentals of Computers, V. Rajaraman, PHI Sixth Edition.
- Computer Fundamentals and Office Automation, Dr. Santosh Kumar Miri, Iterative International
- Computer Fundamentals Architecture and Organization, B. Ram, New Age International Publisher IIP. Publishers, Fifth Edition.
- Fundamentals of Information Technology, Alexis Leon and Mathews Leon, Vikash Publication.

# Reference Books Recommended:

- Introduction to Information Technology, V. Rajaraman, PHI publication.
- Fundamental of IT, Leon and Leon, Leon Tec world.
- Introduction to Information Technology, Aksoy and Denardis, Cengage learning.
- Computers Today, Suresh K. Basandra, Galgotia Publications.
- Information Technology The breaking wave, Dennis P.Curtin, Kim Foley, Kunai Sen and Cathleen Morin, TMH.
- OFFICE 2013 in Simple Steps, Kogent Solution Inc., DremTech Press.
- Access 2010 in Simple Steps by Kogent Learning Solutions Inc.

#### Online Resources:

Introduction to Computer Fundamental from W3school: https://www.w3schools.blog/computer-fundamentals-tutorial



- Introduction to MS-Word from W3school: https://www.w3schools.blog/ms-word-tutorial
- Introduction to MS-Excel from W3school:

https://www.w3schools.com/excel/excel\_introduction.php

- Introduction to MS-PowerPoint from W3school: https://www.w3schools.blog/powerpoint-tutorial
- Introduction to MS-Access from W3school:

https://www.w3schools.com/sql/sql\_ref\_msaccess.asp

Fundamentals of Computers & Information Technology (in Hindi): https://www.mcu.ac.in/wp-content/uploads/2020/04/1PGDCA1-Unit-1-Fundamentals-of-Computers-Information-Technology.pdf.

Fundamentals of Computers & Information Technology (in Hindi): https://hte.rajasthan.gov.in/dept/dte/board\_of\_technical\_education,\_rajasthan/government\_polyte chnic college hanumangarh/uploads/doc/fundamental- final-rkd.pdf.

Information and Computers

Technology: https://cbseacademic.nic.in/web\_material/doc/2014/11\_ICT-IX.pdf.pdf.

https://www.scribd.com/document/534988849/9-Microsoft-office-in-hindi-www-GkNotesPDF-

MS-OFFICE:

https://www.rgycsm.org/uploads/books/MICROSOFT-OFFICE-BOOK.pdf.

MS-OFFICE:

Hindi Notes: https://www.copaguide.com/2020/04/ms-office-topics.html.

Microsoft Office Full Crash Course: https://www.youtube.com/watch?v=SH4oyV5AJ6A

| þ | ART | -D: | Assessment | and       | Evaluation |
|---|-----|-----|------------|-----------|------------|
|   |     |     |            | 12012 120 |            |

Suggested Continuous Evaluation Methods: 50 Marks Maximum Marks: 15 Marks Continuous Internal Assessment (CIA): 35 Marks End Semester Exam (ESE): Better marks out of the two Test / 10 & 10 Internal Test / Quiz-(2): Quiz + obtained marks in Assignment Continuous Internal Assignment/Seminar +Attendance - 05 shall be considered against 15 Marks Assessment (CIA): Total Marks -(By Course Teacher) Managed by Laboratory / Field Skill Performance: Course teacher End Semester Exam On spot Assessment as per lab. - 20 Marks A. Performed the Task based on lab. work (ESE): B. Spotting based on tools & technology (written) - 10 Marks status - 05 Marks Viva-voce (based on principle/technology)

Name wind Signature of Convener & Members of CBoS:

udies Nandkumar

ilaya, Raigarh (d

# FOUR YEAR UNDERGRADUATE PROGRAM (2024 - 28) DEPARTMENT OF INFORMATION TECHNOLOGY

|   | L  |  | FINFORMATION I<br>SE CURRICULUN  |  |                  |
|---|--|--|--|--|------------------|
| PA  | RT- A: Introdu   | ction  |  |  |                  |
|   | gram: Bachelor in<br>ificate / Diploma / De  |  | Semester - II  | Session: 2024-20   | 025              |
| 1   | Course Code  | ITGE-02T   |  |  |                  |
| 2   | Course Title   | Programming in C+  | +  |  |                  |
| 3   | Course Type  | DGE (Discipline Ge   | neric Elective)  |  |                  |
| 1   | Prerequisite   | As per program   |  |  |                  |
| 5 Course Learning. Outcomes (CLO)   |  | <ul> <li>Understand the</li> <li>Write programs</li> <li>Define function</li> <li>Write programs</li> <li>Develop small</li> </ul>             | se, the students will be ab<br>fundamentals of object or<br>s related to concept of objects, class and to create own<br>s for file handling,<br>programs to solve real w | ect oriented program Libraries.  |                  |
| 6   | Credit Value   | 3 Credits   Cr   | 100 N  | Ain Passing Marks: 4   | 10               |
| 7   | Total Marks  | 1 - 5 4h - Cours   | 50   |  |                  |
| PAI   | RT -B: Conte   | aching_Learning Per  | iods-(01 Hr. per period  | d) - 45-Pe <del>rio</del> ds (45 Ho  | urs)             |
| Un  |  | Topics   | s (Course contents)  | *  | No. of<br>Period |
| Γ   | file, Executable file, Executable file, Executable file Testing, Debuggir Structure of C properators, Data Threedence and A and User defined | le, Header file, Languaging, Linker and Loader, Aurogram, C Tokens: Types, Control structure associativity, Array and I functions, function pr |  | History of C language. Constants, Variables, ag statements, Operator ions: Standard Library and Call by reference, | 12               |
| Ü   | Introduction to<br>programming, Fea<br>objects, Access Sp<br>functions. Constr   | Object Oriented I<br>ntures of C++, Structure<br>pecifiers: Private, Public<br>ructor: Default construct                                       | c, Protected, inline function<br>tor, Copy constructor, Par  | of object oriented<br>pes, structure, class and<br>ons, static data and static<br>rameterized constructor,         | 11               |
| 11  | Inheritance: Sin<br>Polymorphism: D  | gle, Multilevel, Mult<br>befinition, Compile time<br>structor overloading, R   | polymorphism: Function Runtime polymorphism:   | derived class, Types of<br>H Hybrid Inheritance,<br>n overloading, Operator<br>Virtual Function, pure              | 11               |
| IV Input-Output and File Handling: I/O classes, File and Stream I/O. Object I/O, File Pointer, Opening and Closing file.  Exception Handling and Standard Template Library: Definition and throws keywords, Template.  Keywords  Token, Identifier, Keyword, Array, Function, Class, Object, Polymords  Template. |  | d File Handling: I/O of<br>File Pointer, Opening an<br>ling and Standard Tem   | classes, File and Stream of<br>ad Closing file.<br>Applate Library: Definition   | on, Exception basics, try,   | 11               |
|   |  | on, Class, Object, Polymo  | rphism, Inheritance, Cons  | tructor,   |                  |
| Dr.   | Harring Convener & Harringu  | Members of CBOS:   | Am Quel  | W John   | L<br>A           |
|   | Store  | The progression of   | Star Park  | i ali pias   | ALUEC            |
|   |  |  | (nice en en en   | 134  | afring.          |

# PART-C: Learning Resources

Text Books, Reference Books and Others

# Text Books Recommended:

- Peter Juliff, Program Design, PHI Publications.
- Yashwant Kanetkar, Let us C: BPB Publications.
- E. Balaguruswamy, Programming in ANSI C, Tata McGraw Hill

# Reference Books Recommended:

- Y. Kanetkar, Let us C++, B.P.B Publication.
- E. Balaguruswamy, Programming in C++, Tata McGraw Hill.
- R. Kumar, Object Oriented Programming with C++, Prakhar Publication(Hindi)
- Dhupiya, Lakhyani, C++ Programming Alka Publications, Ajmer (Paperback, Dhupiya, Lakhyani)(Hindi)

#### Online Resources:

- Introduction to C and C++ from SWAYAM/NPTEL https://onlinecourses.nptel.ac.in/noc22\_es103/preview https://www.youtube.com/watch?v=KG4hjVDw-p8&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=2
- Constant and Inline Function through NPTEL:
  https://www.youtube.com/watch?v=pX6LufLso2M&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=10
- Pointer and Reference NPTEL https://www.youtube.com/watch?v=GtsBZ5e1-cE&list=PLmp4ylk-B4KrM9uOEdvPlVFUkU3jNc6D2&index=12
- Function Overloading NPTEL https://www.youtube.com/watch?v=uJGmGAShHeU&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=13
- Operator Overloading NPTEL https://www.youtubc.com/watch?v=0jpOwc4d-FE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=17
- Dynamic Memory Management NPTEL https://www.youtube.com/watch?v=lkFK2X6q1c0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=18
- Class and Object NPTEL
   https://www.youtubc.com/watch?v=wtuks\_t3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24
- Access Specifiers NPTEL
   https://www.youtube.com/watch?v=6ki\_W7cXdM0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=22
- Constructor and Destructor NPTEL
   https://www.youtube.com/watch?v=wtuks\_f3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24
- C++ different topics from W3School https://www.w3schools.com/CPP/default.asp
- C++ different topics from Javatpoint https://www.javatpoint.com/cpp-tutorial

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Office: In-Charge (Academic)
Shelined Lanckumer Fetal
Vishvavicy aleya, Reigerh (C.G.)

PART -D: Assessment and Evaluation Suggested Continuous Evaluation Methods: Maximum Marks: 100 Marks Continuous Internal Assessment (CIA): 30 Marks End Semester Exam (ESE): 70 Marks Continuous Internal Better marks out of the two Test / Quiz + Internal Test / Quiz-(2): 20 +20 Assessment (CIA): obtained marks in Assignment shall be Assignment / Seminar -10 Total Marks considered against 30 Marks 30 (By Course Teacher) **End Semester Exam** Two section - A & B Section A: Q1. Objective - 10 x1= 10 Mark; Q2. Short answer type- 5x4 = 20 Marks (ESE): Section B: Descriptive answer type qts..1 out of 2 from each unit-4x10=40 Marks Name and Signature of Convener & Members of CBoS:

> Offiser-in-Charge (Avademic) Shahood Randkumar Falel Vishwavidyalaya, Raigarh (O.O.)

Patel 2. Fagarh (C.C.

# FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28) DEPARTMENT OF INFORMATION TECHNOLOGY COURSE CURRICULUM

| PAF          | 2T- £                            | : Introdu  | THE STREET   | SE CURRICULUI   |   |                      |
|--------------|----------------------------------|--|--|---|---|----------------------|
| Prog         | ram:                             | Bachelor in So   | cience (IT)  | Semester - II   | Session: 2024-  | 2025                 |
| Certi        |                                  | / Diploma / Degr   | ·ve)   |   |   |                      |
| 1            | Cou                              | rse Code   | ITGE-02P   |   |   |                      |
| 2            | Course Title                     |  | Lab 2: Progra  | nmming in C++   |   |                      |
| 3            | Cou                              | rse Type   | Practical  |   |   |                      |
| 4            | Pre                              | requisite  | As per program   |   |   |                      |
| 5            |                                  | irse Learning<br>teomes (CLO)  | <ul> <li>Understa which are</li> <li>Code, test using the</li> <li>Write ret</li> <li>Understatallocation passing</li> <li>Develop oriented</li> </ul>   | his course, the students will not the fundamental program e essential to create good C+st, and implement a well-struck+ programming language isable modules (collections on design/implementation and binding, control flow an in-depth understanding programming paradigms.  | ming concepts and meth<br>+ programs.<br>uctured, robust computer<br>s.<br>of functions).<br>issues involved with<br>w, types, subroutines,<br>of functional, logic, an | variable<br>paramete |
| 6            | Cr                               | edit Value   | 1 Credits C  | redit =30 Hours Laborate  | ory or Field Learning/  | Training 20          |
| 7            |                                  | tal Marks  | Max. Marks   |   | n Passing Marks:  | 20                   |
| PAF          | T-E                              | : Content  | of the Cour  | se  | TO D. I. J. (20 Nour  | e)                   |
|              |                                  | Total No. of   | f learning-Traini  | ng/performance Periods  | : 30 Periods (30 Hour   | No. 0                |
| 2.7          | dule                             |  | To   | pics (Course contents   | )   | Perio                |
| Prac<br>Expe | et of<br>ectical<br>riment<br>s. | <ol> <li>Write a progrusing do – write a progrusing do – write a progratatements.</li> <li>Write a progratatements.</li> <li>Write a program Write a program of the progr</li></ol> | ram in C++ to find the loop.  ram in C++ for varian in C++ for Maram in C++ to store the loop.  ram in C++ to store the loop.  ram in C++ to calcance method.  ram in C++ to find the loop.  ram in C++ to find the loop.  ram in C++ to method. | dition of two numbers using the biggest number between the factorial value of a serious arithmetic operation of two 3X3 mand are five books of information of two six employee information of the sum and average of aultiply two numbers using the structure like this using the structure like structure like | as using switch case natrices. on using structure. on using union, ag call by value and five numbers using g private and public   | 30                   |
|              |                                  |  |  |   |   |                      |

Officer In-Charge (Academic)
Shahood Handarmar Friell
Viebwayldyddyd, Fulgal

- 14. Write a program in C++ for operator overloading.
  15. Write a program in C++ for friend class and friend function.
  16. Write a program in C++ for virtual function and virtual class.
  17. Write a program in C++ for Exception Handling.
  18. Write a program in C++ to open and close a file using file Handling.
- 19. Given two ordered arrays of integers, write a program to merge the two-arrays to get an ordered array.
- 20. WAP to display Fibonacci series (i) using recursion, (ii) using iteration
- 21. WAP to calculate Factorial of a number (i) using recursion, (ii) using iteration
- 22. WAP to calculate GCD of two numbers (i) with recursion (ii) without recursion.
- 23. Create a Matrix class using templates. Write a menu-driven program to perform following Matrix Operations (2-D array implementation): a) Sum b) Difference c) Product d) Transpose 22. Create the Person class. Create some objects of this class (by taking information from the user). Inherit the class Person to create two classes Teacher and Student class. Maintain the respective information in the classes and create, display and delete objects of these two classes (Use Runtime Polymorphism).

24. Create a class Triangle. Include overloaded functions for calculating area.

Overload assignment operator and equality operator.

- 25. Create a class Box containing length, breadth and height. Include following methods in it: a) Calculate surface Area b) Calculate Volume c) Increment,
  Overload ++ operator (both prefix & postfix) d) Decrement, Overload -- operator (both prefix & postfix) e) Overload operator == (to check equality of two boxes), as a friend function f) Overload Assignment operator g) Check if it is a Cube or cuboid
- Create a structure Student containing fields for Roll No., Name, Class, Year and Total Marks. Create 10 students and store them in a file.
- 27. Write a program to retrieve the student information from the file created in the previous question and print it in the following format: Roll No. Name Marks
- 28. Copy the contents of one text file to another file, after removing all whitespaces.
- 29. Write a program for exception handling.
- 30. Write a program to insert data into file and to display it.

Note: Concerned teacher can add additional experiment as per requirement.

Signature of Convener & Members of CBoS:

OF-H-S: Hota Kun Schu Schu Structure, union, matrix, constructor, destructor, inheritance.

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PART-C: Learning Resources

Text Books, Reference Books and Others

# Text Books Recommended:

- Peter Juliff, Program Design, PHI Publications.
- · Yashwant Kanetkar, Let us C: BPB Publications.
- E. Balaguruswamy, Programming in ANSI C, Tata McGraw Hill

Reference Books Recommended:

Y. Kanetkar, Let us C++, B.P.B Publication .

Office: In-Charge (Adademic) Shahood Rendhumar Fedel Vishwavidyalaya, Haigarh (C.G.) Blar Patel

- E. Balaguruswamy, Programming in C++, Tata McGraw Hill.
- R. Kumar, Object Oriented Programming with C++, Prakhar Publication(Hindi)
- Dhupiya, Lakhyani, C++ Programming Alka Publications, Ajmer (Paperback, Dhupiya, Lakhyani)(Hindi)

#### Online Resources:

- Introduction to C and C++ from SWAYAM/NPTEL https://onlinecourses.nptel.ac.in/noc22 cs103/preview https://www.youtube.com/watch?v-KG4hjVDw-p8&list-PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=2
- Constant and Inline Function through NPTEL: https://www.youtube.com/watch?v=pX6LufLso2M&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=10
- Pointer and Reference NPTEL https://www.youtube.com/watch?v=GtsBZ5e1-cE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=12
- Function Overloading NPTEL https://www.youtube.com/watch?v=uJGmGAShHeU&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=13
- Operator Overloading NPTEL https://www.youtube.com/watch?v=0jpOwe4d-FE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=17
- Dynamic Memory Management NPTEL https://www.youtube.com/watch?v=lkFK2X6qIc()&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=18
- Class and Object NPTEL https://www.youtube.com/watch?v=wtuks\_f3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24
- Access Specifiers NPTEL https://www.youtube.com/watch?v=6ki\_W7cXdM()&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=22
- Constructor and Destructor NPTEL https://www.youtube.com/watch?v=wtuks\_f3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24
- C++ different topics from W3School https://www.w3schools.com/CPP/default.asp
- C++ different topics from Javatpoint https://www.javatpoint.com/cpp-tutorial

| PART -D: Assess   | sment and Evaluation  |  |   |
|---|---|--|---|
| Suggested Continuous I<br>Maximum Marks:<br>Continuous Internal As<br>End Semester Exam (E. | 50 Marks<br>ssessment (CIA): 15 Marks   |  |   |
| Continuous Internal Assessment (CIA): (By Course Teacher)                                   | Internal Test / Quiz-(2): 10 & 1 Assignment/Seminar +Attendance - 0 Total Marks -   | 5 + obtained marks in Ass<br>considered against        | signment shall be                                     |
| End Semester Exam (ESE):  | Laboratory / Field Skill Perform: A. Performed the Task based on B. Spotting based on tools & tech C. Vivapoce (based on principle/ | nology (written) – 10 Marks<br>(technology) – 05 Marks | Managed by<br>Course teacher<br>as per lab.<br>status |
| Vanne and signature of C<br>Dr H. S. Hota Lien (<br>Chadr man                               | Sonvener & Members of CBoS:   | hal of M   | A L   |

luyalaya, Reigarh (C.C.)

# FOUR YEAR UNDERGRADUATE PROGRAM (2024 - 28) DEPARTMENT OF INFORMATION TECHNOLOGY COURSE CURRICULUM

|    |   | ٥,  | DON'SE COMME  | 0.0011   |
|----|---|---|---|--|
| PA | RT-A: Introdu                                 | ction   |   |  |
|    | ogram: Bachelor in<br>rtificate / Diploma / D |   | Semester - I/III/V  | Session: 2024-2025                             |
| 1  | Course Code                                   | ITVAC-01  |   |  |
| 2  | Course Title                                  | Artificial Intel  | ligence   |  |
| 3  | Course Type                                   | Value Additio   | n Course (VAC)  |  |
| 1  | Prerequisite                                  | As per program  | n   | 11   |
| 5  | Course Learning<br>Outcomes(CLO)              | <ul><li>Understate</li><li>Understate</li><li>Aware a</li></ul> | is course, students will be and basics of AI. and problem solving techn about AI tools. application of AI in variound the current scenario of | niques of AI.<br>us domains.<br>f AI in India. |
| 6  | Credit Value                                  | 2 Credits   |   | earning & Observation   Min Passing Marks: 20  |
| 7  | Total Marks                                   | Max. Marks:   | 50  | HAIN A HOUSE                                   |

# PART - B: Content of the Course

|      | Total No. of Teaching-Learning Periods (01 Hr. per period) - 30 Periods (30 Ho   | No .of Period |
|------|--|---------------|
| Unit | Tonics II ourse contents   |               |
| 1    | Introduction: Overview of Artificial Intelligence (AI), Foundations of AI, Areas and Applications of AI in various domains, AI in India, Impact and examples of AI, Future of AI.  |               |
| 11   | Advanced AI: Basic Concept of Machine Learning, Deep Learning, Computer vision, Network Language Processing (NLP), Speech recognition, Generative AI Applications.   |               |
| III  | AI Tools: Conversational AI: ALEXA, CORTANA, SIRI etc., AI tools for content generation, Image creation, Presentation, Video editing etc.  |               |
| IV   | Application of AI: Agriculture, Healthcare, Environment, Teaching-Learning, E-Commerce, Industry, Research etc.  Artificial Intelligence (AI), Machine Learning (ML), Deep Learning, Computer Vision, Nature Processing (NLP), Conversational AI, Generative AI. | 6             |

Signature of Convener & Members of Chos:

# PART-C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended:

- Introduction to Artificial Intelligence and Expert Systems, Dan W. Patterson, PHI Publication.
- Artificial Intelligence, Elaine Rich and Kevin Knight TMH publication.

Viahwavidyalaya, Flaigarh (O.G.)

- Artificial Intelligence and machine learning, Vinod Chandra S.S., Anand Harcendrn S., PHI learning private Ltd.
- Foundations of Artificial Intelligence and Expert Systems, Macmillan Series in Computer Science, V.S. Jankiraman, K. Sarukesi and P. Gopala Krishnan.

## Online Resources:

Ministry of Electronics and Information Technology Portal for INDIAai:

https://indiaai.gov.in/

Introduction to Artificial Intelligence from SWAYAM:

https://www.youtube.com/watch?v=pKeVMlkFpRc&list=PLwdnzIV3ogoXaceHrrFVZCJKbm\_laSHcH&inde x=2

An introduction to Artificial Intelligence from SWAYAM:

https://onlinecourses.nptel.ac.in/noc24\_cs08/preview

Introduction to Artificial Intelligence from Coursera: https://www.courseru.org/learn/introduction-to-ai

Introduction to Artificial Intelligence: https://www.javatpoint.com/artificial-intelligence-ai

How to Learn Artificial Intelligence from Coursera: https://www.coursera.org/articles/how-to-learn-artificial-intelligence

| PART-D: Assessme                                       | nt and Evaluation  |                                  |   |
|--|--|----------------------------------|---|
| Suggested Continuous Eval<br>MaximumMarks:             | 50 Marks   |                                  |   |
| Continuous Internal Assess                             | ment(CIA): 15 Marks<br>35 Marks  |                                  |   |
| Continuous Internal Assessment ( Tot                   | ernal Test / Quiz-(2): 10 + 10<br>hignment/Seminar- 05<br>al Marks - 15  | obtained marks in                | the two Test / Quiz * Assignment shall be gainst 15 Marks |
| Exam (ESE):  A. B.                                     | oratory/Field Skill Performance:<br>Performed the task based on lear<br>Spotting based on tools (Written)<br>Viva-voce (based on principle/tec | - 10 Marks<br>hnology)- 05 Marks | Managed by Coordinator as per skilling                    |
| De Fris. Hola Kienarure of Conve<br>De Fris. Hola Kien | mer & Members of CBos:   | mal M                            | or Aigute   |
| July 1   | (Sured Thek by) Su   | abrily Clasium                   | ANDEETA KE  |

vishwavidyalaya, Fialgarh (C.G.)

# FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28) DEPARTMENT OF INFORMATION TECHNOLOGY COURSE CURRICULUM

| D /   | V D T  | A: Introd  |  | URSE CURRICULU   | M  |                         |
|---|--|--|--|--|--|-------------------------|
|   |  |  |  |  |  |                         |
|   |  | n: Bachelor in<br>te/Diploma/D   |  | Semester - II/IV/V/VI  | Session: 2024-   | 2025                    |
| 1 Course Code ITSEC-01  |  |  |  |  |  |                         |
| 2   | Cour   | se Title   | MS-Office  |  |  |                         |
| 3   | Cour   | Course Type SEC (Skill Enhancement Course)   |  |  |  |                         |
| 4   | After Completing this course, students will be able to:  Study and use of basic concepts and terminology of information tech Organize files and documents on storage devices. Acquire knowledge of ICT and Internet applications. Develop information technology solutions by evaluating user require advance trends of IT.  |  |  |  |  |                         |
| 5   |  |  |  |  |  |                         |
| 6   | Cre  | dit Value  | 2 Credits  | Credit =15 Hours Theoretical<br>= 30 Hours Laboratory  |  | raining                 |
|   |  |  | (1C+1C)<br>Max. Marks:   | 50 Min   | Passing Marks: 20  | )                       |
| 7   | RT -   | al Marks   | it of the Cou  | and the second s |  |                         |
| _   | odule  | T  | То   | aching-learning periods:<br>tory or Field learning/Traini<br>(30 Hours)<br>pics (Course contents)  |  | No. of<br>Period        |
| Setting form Mail Merge  2. MS-Excel: Opening, ar editing, Tab  3. PowerPoin new slides s |  | Creating of Setting for Mail Merge  2. MS-Excel: Opening, ar editing, Tab  3. PowerPoin new slides s | s. Paragraph setting<br>s. Spelling and Gram<br>Introducing Excel,<br>and Printing workboo<br>sile, Charts, Page sett<br>t: Introducing Powe<br>aving, Opening and | ing documents, Opening and its ing documents, Opening and its instance, Special Replace, Copy past mar check.  Use of Excel sheet, creating k. Font, Alignment, Number, up options.  Proint, Use of PowerPoint proprinting, Layout, Setting text doptions. Table, Picture, Clipar  | new sheet, Saving,<br>Styles and cells and<br>esentation, Creating<br>lirection, Align text,<br>t, Smart art, Shapes | 15                      |
| Tr  | and chart, Movie and sound, Hyperlink and action, Text box, Word art, Object.  1. Create a word document and do followings: page setup, paragraph setup, tab setting etc.  2. Create a excel sheet and do followings: cell formatting, page setup, creating chart and use some predefine function.  3. Create a presentation and do followings: slide animation, text animation, slide show setting etc. |  |  |  | 30   |                         |
| Key   | words  | MS Word, MS Ex   | cel, MS Power Point.   |  | Mark Ly - Mac  |                         |
| Dr  | 1.   | tora Kren (  | Sured That   | (Auademie)  (Auademie)  (Auademie)  (Auademie)  (Auademie)  (Auademie)  (Auademie)  (Auademie)  (Auademie)   | Cheerman Singles   | ANJEG<br>ANJEG<br>Catel |

#### PART-C: Learning Resources

### Text Books, Reference Books and Others

#### Text Books Recommended:

- Computer Fundamentals, P.K. Sinha, BPB Publication, Sixth Edition.
- Fundamentals of Information Technology, Chetan Shrivastava, Kalyan Publishers.
- Fundamentals of Computers, V. Rajaraman, PHI Sixth Edition.
- Computer Fundamentals and Office Automation, Dr. Santosh Kumar Miri, Iterative International Publisher IIP.
- Computer Fundamentals Architecture and Organization, B. Ram, New Age International Publishers, Fifth Edition.
- Fundamentals of Information Technology, Alexis Leon and Mathews Leon, Vikash Publication.

# Reference Books Recommended:

- Introduction to Information Technology, V. Rajaraman, PHI publication.
- Fundamental of IT, Leon and Leon, Leon Tec world.
- Introduction to Information Technology, Aksoy and Denardis, Cengage learning.
- Computers Today, Suresh K. Basandra, Galgotia Publications.
- Information Technology The breaking wave, Dennis P.Curtin, Kim Foley, Kunai Sen and Cathleen Morin, TMH.
- OFFICE 2013 in Simple Steps, Kogent Salution Inc., DremTech Press.
- Access 2010 in Simple Steps by Kogent Learning Solutions Inc.

### Online Resources:

- Introduction to Computer Fundamental from W3school: https://www.w3schools.blog/computer-fundamentals-tutorial
- Introduction to MS-Word from W3school: https://www.w3schools.blog/ms-word-tutorial
- Introduction to MS-Excel from W3school:
- https://www.w3schools.com/excel/excel\_introduction.php
- Introduction to MS-PowerPoint from W3school: https://www.w3schools.blog/powerpoint-tutorial
- Introduction to MS-Access from W3school: https://www.w3schools.com/sql/sql\_ref\_msaccess.asp
- Fundamentals of Computers & Information Technology (in Hindi): https://www.mcu.ac.in/wp-content/uploads/2020/04/1PGDCA1-Unit-1-Fundamentals-of-Computers-Information-Technology.pdf.
- Fundamentals of Computers & Information Technology (in Hindi): https://hte.rajasthan.gov.in/dept/dte/board of technical education, rajasthan/government polytechnic college hanumangarh/uploads/doc/fundamental- final-rkd.pdf.
- Information and Computers Technology: https://cbseacademic.nic.in/web\_material/doc/2014/11\_ICT-IX.pdf.pdf.
- Microsoft Office (in Hindi): https://www.scribd.com/document/534988849/9-Microsoft-office-in-hindi-www-GkNotesPDF-com.
- MS-OFFICE: https://www.rgycsm.org/uploads/books/MICROSOFT-OFFICE-BOOK.pdf.
- MS-OFFICE: Hindi Notes: https://www.copaguide.com/2020/04/ms-office-topics.html.
- Microsoft Office Full Crash Course: https://www.youtube.com/watch?v=SH4oyV5AJ6A

PART -D: Assessment and Evaluation Officer to Characterinar Folds Shelf for conclusionar Folds Mahwali, Laya, Fiolgath (O.G.) Chairman

Suggested Continuous Evaluation Methods: 50 Marks Maximum Marks: 15 Marks Continuous Internal Assessment (CIA): 35 Marks End Semester Exam (ESE): Better marks out of the two Test / Quiz 10 & 10 Internal Test / Quiz-(2): Continuous Internal + obtained marks in Assignment shall Assignment/Seminar +Attendance - 05 Assessment (CIA): be considered against 15 Marks (By Course Teacher) Total Marks -Managed by Laboratory / Field Skill Performance: **End Semester** Course On spot Assessment teacher as per - 20 Marks Exam (ESE): A. Performed the Task based on lab. work lab. status B. Spotting based on tools & technology (written) - 10 Marks Viva-voce (based on principle/technology) - 05 Marks Name and Signature of Convener & Members of CBoS: Dr. Hos Borg Chermen

A