





|           |  |  |  |
|-----------|--|--|--|
| CASC -19P | Lab 12: Mobile Application Development       |  |  |
| CASC -20T | Fundamentals of IoT and Applications         |  |  |
| CASC -20P | Lab 14: Fundamentals of IoT and Applications |  |  |

**Program Outcomes (PO):**

- Gain a complete exposure to the theories and practices of Computer Application.
- Get transformed into a skilled learner and active programmer, enabling the students to focus on their higher studies.
- Value computer professionals and programmers.
- Explore how the concepts and applications of Computer lead to innovative thinking with a problem-solving attitude.

**Program Specific Outcomes (PSO):**

- Understand the basic computer knowledge and concept of operating systems.
- Understanding the concept of programming and develop program in C++.
- Understanding the concept of data structure and implementation with C/C++.
- Understanding the concept of DBMS and implementation in MySQL /Oracle.
- 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 data and computer networks.
- Understanding the basic concept of digital electronics.
- Understanding the basic concept of cyber security and cyber law.
- Understanding the basic concept of Artificial Intelligence.

*[Signature]*  
Dr. H.S. Hota  
(Chairman)

*[Signature]*  
Dr. K.B. Dubey

*[Signature]*  
Dr. S.K. Sahu

*[Signature]*  
Dr. J.K. Sahu

*[Signature]*  
Dr. Anil Sharma

*[Signature]*  
Dr. S. Jain  
*[Signature]*  
R. Khuntia

*[Signature]*  
11/06/24  
Dr. V.K. Gupta

*[Signature]*  
(Sushil Kumar Sahu)

*[Signature]*  
(Dr. Anamika Shukla Ma)

*[Signature]*  
(Suresh Thakur)

*[Signature]*  
18/06/2024

*[Signature]*  
(Shailendra Arora)

*[Signature]*  
ANJEETA KUMAR

*[Signature]*  
(H.S.P. Jena)

*[Signature]*  
Dr. Jaydeep Kumar

*[Signature]*  
Dr. Anamika Shukla Ma  
Vishwavidyalaya, Raigarh (C.G)

Officer-in-Charge (Academic)  
Shaheed Nandkumar Patel  
Vishwavidyalaya, Raigarh (C.G.)















## PART-C: Learning Resources

Text Books, Reference Books and Others

### Text Books Recommended:

- B. A. Davey & H. A. Priestley (2002). Introduction to Lattices and Order (2nd edition). Cambridge University Press.
- Edgar G. Goodaire & Michael M. Parmenter (2018). Discrete Mathematics with Graph Theory (3rd edition). Pearson Education.

### Reference Books Recommended:

- Rudolf Lidl & Günter Pilz (1998). Applied Abstract Algebra (2nd edition). Springer.
- Kenneth H. Rosen (2012). Discrete Mathematics and its Applications: With Combinatorics and Graph Theory (7th edition). McGraw-Hill.
- C. L. Liu (1985). Elements of Discrete Mathematics (2nd edition). McGraw-Hill.

### Online Resources:

- SWAYAM Portal: Online Lectures on Discrete Mathematics  
[https://onlinecourses.swayam2.ac.in/cec20\\_ma02/preview](https://onlinecourses.swayam2.ac.in/cec20_ma02/preview)
- NPTEL YouTube Channel: Online Lectures on Discrete Mathematics  
[https://youtube.com/playlist?list=PL0862D1A947252D20&si=saljtYdt4Z-\\_Js](https://youtube.com/playlist?list=PL0862D1A947252D20&si=saljtYdt4Z-_Js)
- NPTEL YouTube Channel: Online Lectures on Discrete Mathematics  
<https://youtube.com/playlist?list=PLEAYkSg4uSQ2WfcT4QEZUSRdx2ZcFziO&si=uf1UcKDC34RMWcCz>

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

Name and Signature of Convener & Members of CBoS:

Dr. H.S. Hota  
(Chairman)

Dr. K.B. Dubeey

Dr. Forest Thakkar

Dr. Shalindra Agre

Dr. Anand Kumar

Dr. Shubil Kumar Sahas

ANJEEVA KURUR

Dr. Anil Chavhan

Dr. Arvind Shinde Shree

Dr. H.S.P. Tonde

Dr. P.R.S. Jain

Dr. R. Khutke

Dr. Manoj Kumar Patel  
Jalaya, Raigarh (C.G)

In-Charge (Academic)  
Shahood Nandkumar Patil  
Jalaya, Raigarh (C.G)







|   |   |    |
|---|---|----|
|   | Page setup options, Scale to fit (width, height, scale). Formulas Tab: Auto sum (sum, 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  | <p><b>Working with PowerPoint and MS-Access</b></p> <p><b>PowerPoint:</b> 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. Animations Tab: Custom animation for entrance, Exit and emphasis, Applying slide transition, Setting transition speed and sound, Animation on rehearse timing. Slideshow &amp; View Tab: Start slide, Show options, and Setup options. View tab: Presentation views, Colors and Window option.</p> <p><b>MS-Access:</b> 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.</p> | 11 |
| Keywords  | Information Technology (IT), Information and Communication Technology (ICT), G-Suite, MS Word, MS Excel, MS Power Point, MS-Access.   |    |
| Name and Signature of Convener & Members of CBoS: |   |    |

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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.

H.S. Hota  
 Chairman  
 (Dr. K. B. Dabney)  
 (Suresh K. Basandra)  
 (Dr. S.K. Sanyal)  
 (Dr. S. Jain)  
 (R. Khuntia)  
 (Dr. Arun K. Sharma)







**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

**PART- A: Introduction**

|   |                                |   |  |
|---|--------------------------------|---|--|
| Program: Bachelor of Computer Application<br>(Certificate / Diploma / Degree) |                                | Semester - I  | Session: 2024-2025                                     |
| 1   | Course Code                    | CASC-02P  |  |
| 2   | Course Title                   | Lab 1: MS-Office  |  |
| 3   | Course Type                    | Practical   |  |
| 4   | Prerequisite                   | As per program  |  |
| 5   | Course Learning Outcomes (CLO) | After Completing this course, students will be able to: <ul style="list-style-type: none"> <li>• Gain Practical knowledge of MS-Office.</li> <li>• Organize files and documents on storage devices.</li> <li>• Acquire knowledge of ICT and Internet applications.</li> <li>• Develop information technology solutions by evaluating user requirements in advance trends of IT.</li> <li>• Acquire knowledge of MS-Excel, MS-PowerPoint and MS-Access.</li> </ul> |  |
| 6   | Credit Value                   | 1 Credits   | Credit =30 Hours Laboratory or Field Learning/Training |
| 7   | Total Marks                    | Max. Marks: 50  | Min Passing Marks: 20                                  |

**PART -B: Content of the Course**

Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)

| List of Experiments   |  | No. of Period |
|---|--|---------------|
| <b>Application of Information Technology</b> <ol style="list-style-type: none"> <li>How to create mail in a Gmail account? Write the uses of Inbox, Sent, Outbox, Draft, Spam and Trash labels.</li> <li>How to design Google form? Write the steps with appropriate windows.</li> <li>How to create different student classes in Google classroom.</li> <li>How do teachers create assignments and provide due dates, or grades in Google Classroom?</li> <li>How do students find assignments, due dates, or grades in Google Classroom?</li> <li>How to use social media platforms like twitter, Facebook and YouTube?</li> <li>How to use social media platforms like Flickr, Skype, yahoo and WhatsApp?</li> <li>How to use Google spreadsheets, Google Slides and Google forms?</li> <li>How to share files between mobile phone and computer system/Laptop using Bluetooth.</li> </ol> |  | 30            |
| <b>MS-Word</b> <p>Prepare a grocery list having four columns (Serial number, the name of the product, quantity and price) for the month of April, 06.</p> <ul style="list-style-type: none"> <li>&gt; Font specific actions for Title (Grocery List): 14-point Arial font in bold and italics.</li> <li>&gt; The headings of the columns should be in 12-point and bold.</li> <li>&gt; The rest of the document should be in 10-point Times New Roman.</li> </ul>   |  |               |

**Officer-In-Charge (Academic)**

Shahood Nandkumar Patel  
 Vishwavidyalaya, Raigarh (C.G.)

**MS-Word**

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-point Arial font in bold and italics.
- > The headings of the columns should be in 12-point and bold.
- > The rest of the document should be in 10-point Times New Roman.

Dr. H.S. Moha  
 Chairman

Dr. K.B. Dubey

(Sushil Kumar Sahu)

(Dr. S.K. Singh)

(Rakesh Thakur)

(Dr. Anil Sharma)

(Dr. S. Jain)

ANJETA KUMAR

R. Khullaiya

(A.S. Sharma)

Chairman  
 Studies  
 Nandkumar Patel  
 Vishwavidyalaya, Raigarh (C.G.)











d. Calculate Amount=Rate\*Total.

2. Given the following worksheet

|   | A        | B         | C     | 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 |
|----------------------|------------|
| $\geq 80$            | A+         |
| $\geq 60$ and $< 80$ | A          |
| $\geq 50$ and $< 60$ | B          |
| $< 50$               | F          |

3. Given the following worksheet

|   | A        | B             | C    | 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     |
| $\geq 35000$            | 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  $\text{Basic} \leq 1000$
  - 25% of Basic if  $\text{Basic} > 1000$  &  $\text{Basic} \leq 3000$
  - 20% of Basic if  $\text{Basic} > 3000$
- DA Fixed for all employees, 30% of Basic
- Conveyance Allowance (CA)

Officer-in-Charge (Academic)  
Shahood Nandikumar Patil  
Vishwavidyalaya, Raigarh (C.G.)

Dr. H. S. Hota  
Chairman  
Sushil Kumar Saha

Dr. K. B. Dahey  
(Dr. S. K. Saha)  
(S. G. Thakre)

Dr. Anil Sharma  
(Dr. Anil Sharma)

Dr. R. Khulley  
R. Khulley

ANJETA  
ANJETA

Dr. A. S. Sharma  
(Dr. A. S. Sharma)







- >> 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?
- 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 |
|----------------|--------------|-------------|--------------|--------------|-------|
| A              | Rs. 1,000.00 | Rs. 1100.00 | Rs. 1,300.00 | Rs. 800.00   |       |
| B              | Rs. 1,500.00 | Rs. 700.00  | Rs. 1,000.00 | Rs. 2,000.00 |       |
| C              | 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.
10. Generate 25 random numbers between 0 & 100 and find their sum, average and count. How many no. are in the range 50-60.

Officer in Charge  
Shahood Mondkumar  
Vishwavidyalaya, Raipur

Chairman  
R. Khuntley  
Vishwavidyalaya, Raipur

**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:

Dr. H. S. Bhatnagar  
Chairman  
Sushil Kumar Sahu  
Dr. K. A. Dubey  
Suresh (Thakur)  
Dhanraj Kotangale  
Dr. S. J. Jha  
R. Khuntley  
S. Sharma



- 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
  - Company Objectives
  - Management Team
  - Employees
  - 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:

- David Brent, General Manager
  - Tim Canterbury, Head of Sales
  - 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 TVs21"          | Black and White TVs      |
| DVD Recorders              | Video Players            |
| 7.1 Dolby Surround Systems | 2 channel stereo systems |

- o 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:

|                 | January | February | March | April |
|-----------------|---------|----------|-------|-------|
| TVs             | 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.

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.

Chairman  
 of Studies  
 Dr. Nandkumar Patel  
 Raigarh (C.G.)

Officer-in-Charge (Academic)  
 Shaheed Nandkumar Patel  
 Vignavidyalyaya, Raigarh (C.G.)

Dr. H.S. Hota  
 Chairman

Dr. K.B. Dubey

Dr. S.K. Saly  
 Dr. Suresh Kumar

Dr. Anil Sharma

Dr. Anil Sharma

Dr. Anil Sharma

Dr. Anil Sharma

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Dr. Anil Sharma

Dr. Anil Sharma

Dr. Anil Sharma

Dr. Anil Sharma



- 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:
  - Chocolate Desserts
  - Cakes and Puddings
  - Roast Meals
  - 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 text.
- 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
  - Mediterranean
  - 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 text.
- 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.

Office - 2020  
Shahid Noh...  
Vishw...  
Raj...

Chairman  
Studies  
R. Khuntia  
S. Jena (C.G)

Dr. H.S. Hota  
Chairman  
Sushil Kumar Sahul  
Kien  
CD, K.B. Dubey  
Dr. S. Saly  
Suresh Kalyan  
Dr. Anil Sharma  
Ananta Kujur  
Dr. S. Jain  
R. Khuntia  
Ananta Kujur  
Ananta Kujur



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

\*\*\*\*\*

**MS-Access**

1. 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 program as per requirement.

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

Name and Signature of Convener & Members of CBaS:

**PART-C: Learning Resources**

Text Books, Reference Books and Others

**Text Books Recommended:**

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- Computer Fundamentals and Office Automation, Dr. Santosh Kumar Miri, Iterative International Publisher IIP.
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- Computers Today, Suresh K. Basandra, Galgotia Publications.
- Information Technology – The breaking wave, Dennis P.Curtin, Kim Foley, Kunai Sen and Kathleen Moyn, 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:

Office in Charge  
Shahid Vishwakarma

Chairman  
R. Khudley  
18/11/20

Dr. H.S. Haba  
Chairman  
Sushil Kumar Satve  
Dr. K.B. Dubey  
Dr. S.K. Sahu  
Sandeep Kumar  
Dr. D. D. Sharma  
Anjeeta Kujur  
R. Khudley  
Anjeeta Kujur











## PART-C: Learning Resources

### Text Books, Reference Books and Others

#### Text Books Recommended:

- Peter Baer Galvin, Greg Gagne, Operating System Concepts – Abraham Silberschatz, 8th edition, Wiley-India, 2009.
- Andrew S. Tanenbaum, Modern Operating Systems, 3rd Edition, PHI
- Elmasri, Carrick, Levine, Operating Systems: A Spiral Approach – TMH Edition

#### Reference Books Recommended:

- Akshay Singh, Operating System, RGCSM Publications
- Rusell A Stultz, MS DOS 6.22, BPB Publications
- Brain Underdahl, Teach yourself Windows 2000, Wiley Publications.
- Peter Norton, Maximizing Windows, Teachmedia.
- Ray Duncan, Advances MS-DOS Programming, BPB
- Ray Yao, Shell Scripting in 8 Hours

#### Online Resources:

- Fundamentals of Computer , Windows Operating System: <https://vikaspedia.in/education/digital-literacy/it-literacy-courses-in-associating-with-msup/computer-fundamentals>
- Introduction to Operating System: <https://www.w3schools.in/operating-system/tutorials/>
- Introduction to Operating System: <https://www.javatpoint.com/windows>
- Windows : <https://www.javatpoint.com/windows>
- Linux: <https://www.javatpoint.com/what-is-linux>
- DOS: <https://www.geeksforgeeks.org/ms-dos-operating-system/>
- DOS : <https://www.javatpoint.com/ms-dos-operating-system>

## 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 Assessment (CIA):<br>(By Course Teacher) | Internal Test / Quiz-(2): 20 & 20 | Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 30 Marks |
|  | Assignment / Seminar - 10         |   |
|  | Total Marks - 30                  |   |

|                          |  |
|--------------------------|--|
| End Semester Exam (ESE): | Two section – A & B<br>Section A: Q1. Objective – 10 x1= 10 Mark; Q2. Short answer type- 5x4 =20 Marks<br>Section B: Descriptive answer type qts., 1 out of 2 from each unit-4x10=40 Marks |
|--------------------------|--|

### Name and Signature of Convener & Members of CBAS:

Dr. H.S. Khatu  
 Chairman  
 Sushil Kumar Sahu  
 (Dr. K. B. Deubey)  
 Ernest Thakur  
 Shailendra Singh  
 (Dr. S. K. Singh)  
 Durgam Kotwale  
 (Dr. Anil Sharma)  
 Anurag  
 (Dr. S. Jain)  
 R. Khuntia  
 Anjeeta Kujur  
 (Dr. A.S. Sharma)

Officer-In-Charge (Academic)  
 Shaheed Nandkumar P. Lal  
 Vishwavidyalaya, Raigarh (C.G.)  
 ANJEETA KIJUR



**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

| <b>PART- A: Introduction</b>  |                                |  |
|---|--------------------------------|--|
| Program: Bachelor in Computer Application<br>(Certificate / Diploma / Degree) |                                | Semester - I   |
|   |                                | Session: 2024-2025   |
| 1   | Course Code                    | CASC-03P   |
| 2   | Course Title                   | Lab 2: Operating System  |
| 3   | Course Type                    | Practical  |
| 4   | Prerequisite                   | As per program   |
| 5   | Course Learning Outcomes (CLO) | At the end of this course, the students will be able to: <ul style="list-style-type: none"> <li>• Understand the fundamental concepts of DOS, Windows and Linux Operating System.</li> <li>• Understand basics of DOS commands and its types.</li> <li>• Understand features of Windows Operating system.</li> <li>• Understand comparative features of DOS and Windows Operating systems.</li> <li>• Explore functionality of Linux.</li> </ul> |
| 6   | Credit Value                   | 1 Credits   Credit = 30 Hours Laboratory or Field Learning/Training  |
| 7   | Total Marks                    | Max. Marks: 50   Min Passing Marks: 20   |

**PART -B: Content of the Course**  
 Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)

| Module  | Topics (Course contents)   | No. of Period |
|---|--|---------------|
| List of Practical Experiment  | 1. Demonstrate different Directory naming listing structure with all options.<br>2. Create one file and rename file using DOS command<br>3. Demonstrate all Internal DOS Commands with Output.<br>4. Demonstrate all external DOS Commands with output.<br>5. Introduction to Windows and Familiarity with its controls.<br>6. Study and use of Desktop, my computer, recycle bin, Task bar.<br>7. Working with Files and Folder.<br>8. Use of various window applications: Calculator, notepad and MS-Paint.<br>9. Explaining control panel options.<br>10. Working with printers.<br>11. Create a file using Linux command.<br>12. Write a Linux command which lists all files and directories.<br>13. Demonstrate use of grep command.<br>14. Create Directory using Linux command and create 3 different files in this directory.<br>15. Delete above created files and directory using Linux command.<br>16. Explaining various flavors of Linux. | 30            |
| Keywords  | DOS, Windows, Linux.   |               |
| Note: Concerned teacher can add additional experiment as per requirement. |  |               |

Officer in Charge (Academic)  
 Shaheed Nand Lal  
 Vishwavidyalaya, Raigarh

Name and Signature of Convener & Members of CBoS:

Dr. H.S. Hota (Chairman) | Dr. K.B. Dubey | Dr. S.K. Sahu | Dr. Anil Sharma | Dr. S. Jain | R. Khuntia

Sushil Kumar Sahu | (Sushil Kumar Agri) | ANJETA KUMAR | Dr. A.S. Bora







**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

| <b>PART- A: Introduction</b>   |                                |   |
|--|--------------------------------|---|
| Program: Bachelor in Computer Application<br>(Certificate / Diploma / Degree/Honors) |                                | Semester -II  |
| Session: 2024-2025   |                                |   |
| 1  | Course Code                    | CASC-04   |
| 2  | Course Title                   | Digital Electronics   |
| 3  | Course Type                    | DSC (Discipline Specific Course)  |
| 4  | Prerequisite                   | As per program  |
| 5  | Course Learning Outcomes (CLO) | <p>At the end of this course, the students will be able:</p> <ul style="list-style-type: none"> <li>To understand the fundamental concepts and techniques used in digital electronics.</li> <li>Understand how the computer system identifies the data inside.</li> <li>To understand and examine the structure of various number systems and its application in digital design.</li> <li>To Perform basic arithmetic calculations in binary, decimal and hexadecimal;</li> <li>The ability to understand, analyze and design various combinational and sequential circuits.</li> <li>To identify the basic requirements according to the specification for a newly customized digital circuit and design it in a cost effective manner.</li> </ul> |
| 6  | Credit Value                   | 4 Credits      Credit = 15 Hours - Learning & Observation   |
| 7  | Total Marks                    | Max. Marks: 100      Min Passing Marks: 40  |

**PART -B: Content of the Course**

Total No. of Teaching-learning Periods (01 Hr. per period) – 60 Periods (60 Hours)

| Unit | Topics (Course contents)  | No. of Period |
|------|---|---------------|
| I    | <b>NUMBER SYSTEM AND DATA REPRESENTATION</b> : Introduction of number system (binary, decimal, octal, hexadecimal etc. ), inter-conversion between the number systems, arithmetic operations, complements in the number system, representation of numeric data(binary representation of integers, fixed point and floating point data representation), codes and its classification(weighted code and its types like NBCD etc. , non-weighted code like (Excess-3 code Gray code etc. ), alphanumeric code like (ASCII, UNICODE, EBCDIC etc. ), Error detecting code like (parity bit coding technique, etc.), Error correcting codes like (hamming code etc.)) | 15            |
| II   | <b>BOOLEAN ALGEBRA</b> : Boolean algebra and basic operations, sum of product, product of sum, simplification of Boolean expression using simplification techniques: Boolean laws and K-Map.<br><b>FUNDAMENTALS OF DIGITAL CIRCUIT DESIGN</b> : Digital logic families and its properties, Logic gate and its types, Construction of basic digital circuits using fundamental gates as well as Universal gates, simplification of digital circuit. Types of digital circuits (combinational circuit, sequential circuits).  | 15            |
| III  | <b>COMBINATIONAL CIRCUIT</b> : Adder (half adder, full adder, N bit adder), Subtractor (half subtractor, full subtractor, N bit subtractor), Decoder, Encoder, Multiplexer, De-multiplexer, Comparator, Code Convertor<br><b>SEQUENTIAL CIRCUIT</b> : Multivibrators/Latch, Flip-flop and its types (S R flip flop, D Flip Flop, J K Flip Flop, T Flip Flop, Master Slave Flip Flop), Register and its types, Counters and its types.   | 15            |
|      | <b>MICROPROCESSORS</b> : Introduction of microprocessor, evolution of microprocessor, basic components in microprocessor, basic microprocessor instruction, addressing modes, designing of eight-bit microprocessor (8085 microprocessor), designing of 16-bit microprocessor (8086 microprocessor).  | 15            |

Office in Charge  
 Shaheed Nandan  
 Vishwakarma

Chairman  
 Dr. H.S. Flota  
 Dr. K.B. Dubey  
 Dr. S. S. S. S.

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 Dr. S. S. S. S.  
 Dr. S. Jain  
 R. Khudley  
 J. Thakur  
 Dr. Anil Sharma  
 Dr. S. S. S. S.



Keywords: Number System, Logic gates, Combinational circuits, Sequential circuits, flip-flop, Registers, Counters, Microprocessor.

Name and Signature of Convener & Members of CBoS:

Dr. H.S. Hata  
Chairman

*(Dr. K.B. Dubey)*  
*(Dr. S.K. Saha)*  
*(Dr. Anil Sharma)*  
*(Suresh Thakur)*  
*(Dr. Anil Sharma)*  
*(Sushil Kumar Jais)*  
*(Dr. S. Singh)*  
*(Shailendra Pr.)*  
*(Anjeeta Kujur)*

**PART-C: Learning Resources**

Text Books, Reference Books and Others

Text Books Recommended:

- D. Nasib, S. Gill, J.B. Dixit, Digital Design and Computer Organization. Laxmi Publications Pvt Limited.
- K.K Neniwal, Digital Electronics (Hindi), Paperback Publication.

Reference Books Recommended:

- M. Morris Mano, Digital logic and Computer Design, Prentice-hall of India private ltd.
- A. K. Maini. Digital Electronics Principles, Devices and Applications, John Wiley & Sons, Ltd.

Online Resources:

- Digital Circuits by Prof. Santanu Chattopadhyay (NPTEL)  
<https://youtube.com/playlist?list=PLbRMhDVUMngePP5JeezxImF-FzOC9wstz&si=6YjQgG1tFGtYmEZv>
- Digital Electronics by Prof Gautam Saha (NPTEL)  
<https://youtube.com/playlist?list=PLbRMhDVUMnge4gDT0vBWjCb3Lz0HnYKkX&si=L6PMoGGOG13MM5jy>
- Switching Circuits and Logic Design by Prof. Indranil Sengupta. IIT Kharagpur  
[https://youtube.com/playlist?list=PLbRMhDVUMngfV8C6EINAUaQQz06wEhFM5&si=c8gollf\\_VYBAzp0](https://youtube.com/playlist?list=PLbRMhDVUMngfV8C6EINAUaQQz06wEhFM5&si=c8gollf_VYBAzp0)
- Online Simulator's for Digital Electronics Practices: CircuitVerse - Digital Circuit Simulator online
- Digital Electronics reference: Digital Electronics Tutorial - Javatpoint

**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 Assessment (CIA):<br>(By Course Teacher) | Internal Test / Quiz-(2): 20 & 20   | Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 30 Marks |
|  | Assignment / Seminar - 10<br>Total Marks - 30   |   |
| End Semester Exam (ESE):                                     | Two section - A & B<br>Section A: Q1. Objective - 10 x 1 = 10 Mark; Q2. Short answer type- 5x4 = 20 Marks<br>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. H.S. Hata)*  
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*(Dr. K.B. Dubey)*  
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*(Suresh Thakur)*  
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*(Sushil Kumar Jais)*  
*(Dr. S. Singh)*  
*(Shailendra Pr.)*  
*(Anjeeta Kujur)*



**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

**PART- A: Introduction**

|   |               |                    |
|---|---------------|--------------------|
| Program: Bachelor in Computer Application<br><i>(Certificate / Diploma / Degree/Honors)</i> | Semester - II | Session: 2024-2025 |
|---|---------------|--------------------|

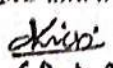
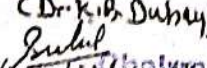
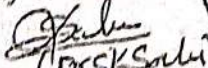
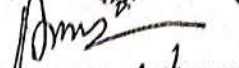

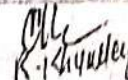

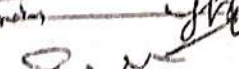
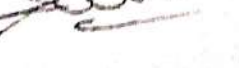
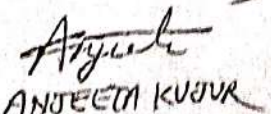
|   |                                |   |  |
|---|--------------------------------|---|--|
| 1 | Course Code                    | CASC-05T  |  |
| 2 | Course Title                   | Programming in C++  |  |
| 3 | Course Type                    | DSC (Discipline Specific Course)  |  |
| 4 | Prerequisite                   | As per program  |  |
| 5 | Course Learning Outcomes (CLO) | At the end of this course, the students will be able to: <ul style="list-style-type: none"> <li>• Understand the fundamentals of object oriented programming.</li> <li>• Write programs related to concept of object oriented program</li> <li>• Define functions, class and to create own Libraries.</li> <li>• Write programs for file handling.</li> <li>• Develop small programs to solve real world problems.</li> </ul> |  |
| 6 | Credit Value                   | 3 Credits   | Credit = 15 Hours - Learning & Observation |
| 7 | Total Marks                    | Max. Marks: 100   | Min Passing Marks: 40                      |

**PART -B: Content of the Course**

Total No. of Teaching-Learning Periods (01 Hr. per period) - 45 Periods (45 Hours)

| Unit     | Topics (Course contents)  | No. of Period |
|----------|---|---------------|
| I        | Introduction and Programming Concepts : Definition of Program, Source file, Object file, Executable file, Header file, Language Translator- Assembler, Interpreter, Compiler, Testing, Debugging, Linker and Loader, Algorithms, Flow Charts, History of C language, Structure of C program , C Tokens : Identifiers, Keywords, Constants, Variables, Operators, Data Types, Control structure: Conditional and looping statements, Operator Precedence and Associativity, Array and its types, Pointer, Functions : Standard Library and User defined functions, function prototype, Call by value and Call by reference, recursive functions, String functions. | 12            |
| II       | 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, Destructor.   | 11            |
| III      | 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 virtual function, Inline function, friend function, friend class.  | 11            |
| IV       | 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.<br>Exception Handling and Standard Template Library: Definition, Exception basics, try, catch and throws keywords, Template.   | 11            |
| Keywords | Token, Identifier, Keyword, Array, Function, Class, Object, Polymorphism, Inheritance, Constructor, Template.   |               |

Name and Signature of Convener & Members of CBAS:

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 Dr. K.B. Dubey   
 Dr. S.K. Sahu   
 Dr. Anil Sharmu   
 Dr. S. Jain   
 R. S. Shrivastava   
 Dr. Anil Sharmu   
 Dr. Anil Sharmu   
 Dr. Anil Sharmu   
 Anjeeta Kujur 

Office: ...  
 Shaheed ...  
 Vishwavidyalaya



## **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://onlinecourses.nptel.ac.in/noc22_cs103/preview)  
<https://www.youtube.com/watch?v=KG4hjVDw-p8&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=2>
- Constant and Inline Function through NPTEL:  
<https://www.youtube.com/watch?v=pX6LufLso2M&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=10>
- Pointer and Reference NPTEL  
<https://www.youtube.com/watch?v=GtsBZ5e1-cE&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=12>
- Function Overloading NPTEL  
<https://www.youtube.com/watch?v=uJGmGAShHeU&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=13>
- Operator Overloading NPTEL  
<https://www.youtube.com/watch?v=0jpOwc4d-FE&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=17>
- Dynamic Memory Management NPTEL  
<https://www.youtube.com/watch?v=lkFK2X6qIc0&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=18>
- Class and Object NPTEL  
[https://www.youtube.com/watch?v=wtuks\\_f3vP4&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=24](https://www.youtube.com/watch?v=wtuks_f3vP4&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=24)
- Access Specifiers NPTEL  
[https://www.youtube.com/watch?v=6ki\\_W7cXdM0&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=22](https://www.youtube.com/watch?v=6ki_W7cXdM0&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=22)
- Constructor and Destructor NPTEL  
[https://www.youtube.com/watch?v=wtuks\\_f3vP4&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=24](https://www.youtube.com/watch?v=wtuks_f3vP4&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&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>

**Officer In-Charge (Academic)**  
Shaheed Nandkumar Patel  
Vishwavidyalaya, Raigarh (C.G.)

**Chairman**  
Shri. N. K. Patil  
Vishwavidyalaya, Raigarh (C.G.)







**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

| <b>PART- A: Introduction</b>  |                                |   |  |
|---|--------------------------------|---|--|
| Program: Bachelor in Computer Application<br>(Certificate / Diploma / Degree) |                                | Semester - II   | Session: 2024-2025                                     |
| 1   | Course Code                    | CASC-05P  |  |
| 2   | Course Title                   | Lab 3: Programming in C++   |  |
| 3   | Course Type                    | Practical   |  |
| 4   | Prerequisite                   | As per program  |  |
| 5   | Course Learning Outcomes (CLO) | <p>At the end of this course, the students will be able to:</p> <ul style="list-style-type: none"> <li>Understand the fundamental programming concepts and methodologies which are essential to create good C++ programs.</li> <li>Code, test, and implement a well-structured, robust computer program using the C++ programming language.</li> <li>Write reusable modules (collections of functions).</li> <li>Understand design/implementation issues involved with variable allocation and binding, control flow, types, subroutines, parameter passing.</li> <li>Develop an in-depth understanding of functional, logic, and object-oriented programming paradigms.</li> </ul> |  |
| 6   | Credit Value                   | 1 Credits   | Credit =30 Hours Laboratory or Field Learning/Training |
| 7   | Total Marks                    | Max. Marks: 50  | Min Passing Marks: 20                                  |

**PART -B: Content of the Course**

Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)

| Module                         | Topics (Course contents)   | No. of Period |
|--------------------------------|--|---------------|
| List of Practical Experiments. | <ol style="list-style-type: none"> <li>Write a program in C++ for addition of two numbers using float data type.</li> <li>Write a program in C++ to find the biggest number between two numbers.</li> <li>Write a program in C++ to find the factorial value of any entered number using do - while loop.</li> <li>Write a program in C++ for various arithmetic operations using switch case statements.</li> <li>Write a program in C++ for Multiplication of two 3X3 matrices.</li> <li>Write a program in C++ to store five books of information using structure.</li> <li>Write a program in C++ to store six employee information using union.</li> <li>Write a program in C++ to calculate simple interest using call by value and call by reference method.</li> <li>Write a program in C++ to find the sum and average of five numbers using class and objects.</li> <li>Write a program in C++ to multiply two numbers using private and public member functions.</li> <li>Write a program in C++ to print structure like this using scope resolution operator<br/> 1<br/> 1 2<br/> 1 2 3<br/> 1 2 3 4<br/> 1 2 3 4 5</li> <li>Write a program in C++ for constructor and Destructor.</li> </ol> | 30            |

Officer-in-Charge (Academic)  
Shahood Nandkumar Patel  
Vishwavidyalaya, Raigarh (C.O.)

Chairman  
Students  
Patel







- R. Kumar, Object Oriented Programming with C++, Prakhara 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://onlinecourses.nptel.ac.in/noc22_cs103/preview)  
<https://www.youtube.com/watch?v=KG4hjVDw-p8&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=2>
- Constant and Inline Function through NPTEL:  
<https://www.youtube.com/watch?v=pX6LufLso2M&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=10>
- Pointer and Reference NPTEL  
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- Function Overloading NPTEL  
<https://www.youtube.com/watch?v=uJGmGASHHeU&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=13>
- Operator Overloading NPTEL  
<https://www.youtube.com/watch?v=0jpOwe4d-FE&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=17>
- Dynamic Memory Management NPTEL  
<https://www.youtube.com/watch?v=lkFK2X6qlc0&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=18>
- Class and Object NPTEL  
[https://www.youtube.com/watch?v=wtuks\\_f3vP4&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=24](https://www.youtube.com/watch?v=wtuks_f3vP4&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=24)
- Access Specifiers NPTEL  
[https://www.youtube.com/watch?v=6ki\\_W7cXdM0&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=22](https://www.youtube.com/watch?v=6ki_W7cXdM0&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=22)
- Constructor and Destructor NPTEL  
[https://www.youtube.com/watch?v=wtuks\\_f3vP4&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&index=24](https://www.youtube.com/watch?v=wtuks_f3vP4&list=PLmp4yIk-B4KrM9uOEEdvPIVFUkU3jNc6D2&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: 50 Marks

Continuous Internal Assessment (CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

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

Name and Signature of Convener & Members of CoS:

Dr. H.S. Hota (Chairman) *(Signature)*  
 Dr. K.B. Dubey *(Signature)*  
 Dr. S.K. Salu *(Signature)*  
 Dr. Anil Sharma *(Signature)*  
 Dr. S. Jain *(Signature)*  
 Dr. Khushali *(Signature)*  
 Dr. Suresh Thakur *(Signature)*

Officer in Charge (Academic)  
 Shaheed Nandkumar Patel  
 Vishwavidyalaya, Raigarh (C.G.) *(Signature)*  
 ANJETA KUMAR *(Signature)*







## PART-C: Learning Resources

### Text Books, Reference Books and Others

#### Text Books Recommended:

- Michael T. Goodrich, Data Structures and Algorithms in C++, Wiley
- Horowitz and Sahani, Fundamentals of Data Structures, Computer Science Press

#### Reference Books Recommended:

- Alfred V. Aho, Data structures and Algorithms, Jhon E. Hopcroft and J.E. Ullman.
- Jean Paul Trembley and Paul Sorenson, An Introduction to Data Structures with Applications, TMH, International Student Edition
- R. Kruse, Leung & Tondo, Data Structures and Program Design in C, PHI publication, 2<sup>nd</sup> Edition

#### Online Resources:

- NPTEL YouTube Channel: Data Structure Complete course
- <https://youtube.com/playlist?list=PLc2MoXNv7E4mtsPlnn9BnTOENXsGyoDgR&si=aAYaVZ-vWfeuhFEO>
- NPTEL YouTube Channel: Introduction to Data Structure
- <https://www.youtube.com/watch?v=zWg7U0OEAoE&list=PLBF3763AF2E1C572F&index=1>
- NPTEL YouTube Channel: Stacks
- <https://www.youtube.com/watch?v=g1USSZVWDsY&list=PLBF3763AF2E1C572F&index=2>
- NPTEL YouTube Channel: Queues and linked list
- <https://www.youtube.com/watch?v=PGWZUgzDMYI&list=PLBF3763AF2E1C572F&index=3>
- NPTEL YouTube Channel: Trees
- <https://www.youtube.com/watch?v=tORLeHHtazM&list=PLBF3763AF2E1C572F&index=6>
- NPTEL YouTube Channel: Graphs
- <https://www.youtube.com/watch?v=9zpSs845wf8&list=PLBF3763AF2E1C572F&index=24>
- W3schools Data Structure Reference: [DSA Tutorial \(w3schools.com\)](http://DSA Tutorial (w3schools.com))

## 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 Assessment (CIA):<br>(By Course Teacher) | Internal Test / Quiz-(2): 20 & 20<br>Assignment / Seminar - 10<br>Total Marks - 30 | Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 30 Marks |
|--|--|---|

|                          |   |
|--------------------------|---|
| End Semester Exam (ESE): | Two section - A & B<br>Section A: Q1. Objective - 10 x 1 = 10 Mark: Q2. Short answer type- 5x4 = 20 Marks<br>Section B: Descriptive answer type qts., out of 2 from each unit-4x10=40 Marks |
|--------------------------|---|

### Name and Signature of Convener & Members of CBoS:

~~Dr. H.S. Hota~~ ~~Chairman~~ ~~(Dr. K.B. Dahey)~~ ~~(Dr. S.K. Sahu)~~ ~~(Dr. S. Jais)~~ ~~(Dr. Anil Sharma)~~ ~~(K. Khuntia)~~  
~~Sushil Kumar~~ ~~(Suresh Thakur)~~ ~~(S. Sahu)~~ ~~(S. Kumar)~~ ~~(S. Kumar)~~ ~~(S. Kumar)~~ ~~(S. Kumar)~~ ~~(S. Kumar)~~  
 Chairman  
 Shri. Anil Kumar Patil  
 Vishwavidyalaya, Raigarh (C.G.)  
 ANGEETA KUMAR  
 Officer in Charge (Academic)  
 Shaheed Nandkumar Patil  
 Vishwavidyalaya, Raigarh (C.G.)



**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

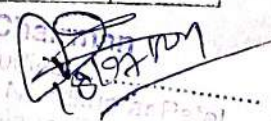
| <b>PART- A: Introduction</b>  |                                |   |
|---|--------------------------------|---|
| Program: Bachelor in Computer Application<br>(Certificate / Diploma / Degree) |                                | Semester – II   |
|   |                                | Session: 2024-2025  |
| 1   | Course Code                    | CASC-06P  |
| 2   | Course Title                   | Lab 4: Data Structure Using C++   |
| 3   | Course Type                    | Practical   |
| 4   | Prerequisite (if, any)         | As per program  |
| 5   | Course Learning Outcomes (CLO) | <p>At the end of this course, the students will be able to:</p> <ul style="list-style-type: none"> <li>• Understand how the concept of data structure can be implemented programmatically.</li> <li>• Implement the fundamentals data structure through C and C++</li> <li>• Understand the functioning of Array and linked list programmatically.</li> <li>• Understand the applications of array, linked list stack, queue, tree and graph programmatic.</li> <li>• Write programs for various data structures for real world application.</li> </ul> |
| 6   | Credit Value                   | 1 Credits   |
|   |                                | <i>Credit =30 Hours Laboratory or Field Learning/Training</i>   |
| 7   | Total Marks                    | Max. Marks: 50  |
|   |                                | Min Passing Marks: 20   |

**PART -B: Content of the Course**

Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)

| Module                          | Topics (Course contents)   | No. of Period |
|---------------------------------|--|---------------|
| Lab./Field Training/ Experiment | <ol style="list-style-type: none"> <li>1. Write a program to create a square matrix, fill the data inside and print the diagonal elements.</li> <li>2. Write a program to perform addition and subtraction on two matrices.</li> <li>3. Write a program to perform multiplication on two matrices.</li> <li>4. Write a program to perform insertion, deletion of nodes from the end in singly linked list.</li> <li>5. Write a program to perform insertion and deletion of nodes from the end in singly linked list.</li> <li>6. Write a program to perform insertion and deletion of nodes from the end in circular doubly linked list.</li> <li>7. Write a program to perform push and pop operations in stack, where stack should be created using array.</li> <li>8. Write a program to perform push and pop operation in stack, where stack should be created linked list.</li> <li>9. Write a program to calculate factorial of given number using stack.</li> <li>10. Write a program to perform insertion and deletion of data items in queue, queue should be implemented by using a linked list.</li> <li>11. Write a program to perform insertion and deletion of data items in queue, queue should be implemented by using arrays.</li> <li>12. Write a program to demonstrate functioning of a double ended queue.</li> <li>13. Write a program to read the postfix arithmetic expression and evaluate its value using the stack.</li> <li>14. Write a program to show how to handle the overflow and underflow situation in stack.</li> <li>15. Write a program to convert infix notation-based expression into the postfix notation-based expression using the stack.</li> <li>16. Write a program to implement the concept of priority-based element</li> </ol> | 30            |

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 In-Charge (Academic)



- traversing using priority queue.
17. Write a program to implement the concept of priority-based element traversing using priority queue.
  18. Write a program to create binary search tree using the concept of linked list and array, suppose data set will be given at the run time.
  19. Write a program to create a binary tree with any data set and traverse the data items in pre-order, in-order and post-order manner using recursion.
  20. Write a program to perform deletion of any data item from the binary search tree.
  21. Write a program to find the height of any tree.
  22. Write a program to create any given undirected graph using the adjacency matrix, and print each node/element with list of its adjacent elements.
  23. Write a program to find the height of any given tree.
  24. Write a program to traverse the element of given graph according BFS and DFS.
  25. Write a program to find the minimum spanning tree of any given graph.
  26. Write a program to search any run time given element from the array of 10 elements in the array are unsorted.
  27. Write a program to demonstrate the binary search.
  28. Write a program to find the smallest and largest element in any array.
  29. Write a program to arrange the data items of any array in ascending order.
  30. Write a program to arrange the data items of any array in descending order using quick sort.

**Note:** Concerned teacher can add additional practical exercises as per requirement.

**Keywords** Array, Linked List, Stack, Queue, traversing, Tree, Graph, Searching, Sorting, Hashing.

**Name and Signature of Convener & Members of CBOS:**

Dr. H.S. Hota (Chairman) *[Signature]*  
 Dr. K.B. Dubey *[Signature]*  
 Dr. S.K. Sahu *[Signature]*  
 Dr. S. Jain *[Signature]*  
 Dr. Anil Sharma *[Signature]*  
 R. Khuntia *[Signature]*  
 Anjali Kuru *[Signature]*  
 Sushil Kumar Sahu *[Signature]*  
 Swarn Thakur *[Signature]*  
 Shalini *[Signature]*  
 Anjali *[Signature]*  
 Anjali *[Signature]*  
 Anjali *[Signature]*  
 Anjali *[Signature]*

**PART-C: Learning Resources**

Text Books, Reference Books and Others

**Text Books Recommended:**

- Michael T. Goodrich, Data Structures and Algorithms in C++, Wiley
- Horowitz and Sahani, Fundamentals of Data Structures, Computer Science Press

**Reference Books Recommended:**

- Alfred V. Aho, Data structures and Algorithms, Jhon E. Hopcroft and J.E. Ullman.
- Jean Paul Trembley and Paul Sorenson, An Introduction to Data Structures with Applications, TMH, International Student Edition
- R. Kruse, Leung & Tondo, Data Structures and Program Design in C, PHI publication, 2<sup>nd</sup> Edition

**Online Resources:**

- NPTEL YouTube Channel: Data Structure Complete course  
<https://youtube.com/playlist?list=PLc2MoXNv7E4mtsPlnn9BnTOENXsGyoDgR&si=aAYaVZ-vWfeuhFEO>
- NPTEL YouTube Channel: Introduction to Data Structure  
<https://www.youtube.com/watch?v=zWg7U0OEAoE&list=PLBF3763AF2E1C572F&index=1>
- NPTEL YouTube Channel: Stacks  
<https://www.youtube.com/watch?v=g1USSZVWDsY&list=PLBF3763AF2E1C572F&index=2>

Dr. Shalini (Convener)  
 Shalini Manikumar Patil  
 Vishwavidyalaya, Raigarh (C.G.)

*[Signature]*  
 18/02/2021



- NPTEL YouTube Channel: Queues and linked list  
<https://www.youtube.com/watch?v=PGWZUgzDMYI&list=PLBF3763AF2E1C572F&index=3>
- NPTEL YouTube Channel: Trees  
<https://www.youtube.com/watch?v=iORLeHHtazM&list=PLBF3763AF2E1C572F&index=6>
- NPTEL YouTube Channel: Graphs  
<https://www.youtube.com/watch?v=9zpSs845wI8&list=PLBF3763AF2E1C572F&index=24>
- W3schools Data Structure Reference: DSA Tutorial (w3schools.com)

### PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks

Continuous Internal Assessment (CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

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

Name and Signature of Convener & Members of CBoS:

Dr. H.S. Hota *Hota*  
Chairman (Dr. K.B. Dubey) *Dubey*  
*Sanku* (Dr. S. Saty) *Sanku*  
*Devesh* (Dr. Anil Sharma) *Anil Sharma*  
*Pral* (Dr. S. Jain) *Jain*  
*Sushil Kumar Sahu* (Dr. Suresh Kumar) *Suresh Kumar*  
*Shashi Kumar*  
*ANJETA KUMAR*  
*R. Khurshid*  
*AS. Sharma*

Officer-in-Charge (Academic)  
Shahood Nandkumar Patil  
Vishwavidyalaya, Raigarh (C.G.)

*Shahood Nandkumar Patil*  
Shahood Nandkumar Patil  
Vishwavidyalaya, Raigarh (C.G.)



**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

**PART- A: Introduction**

|  |                                |   |  |
|--|--------------------------------|---|--|
| Program: Bachelor in Computer Application<br>(Certificate / Diploma / Degree/Honors) |                                | Semester - I  | Session: 2024-2025                         |
| 1  | Course Code                    | CAGE-01T  |  |
| 2  | Course Title                   | Computer Fundamental and MS office  |  |
| 3  | Course Type                    | DGE (Discipline Generic Elective)   |  |
| 4  | Prerequisite                   | As per program  |  |
| 5  | Course Learning Outcomes (CLO) | After Completing this course, students will be able to: <ul style="list-style-type: none"> <li>• Study and use of basic concepts and terminology of information technology.</li> <li>• Organize files and documents on storage devices.</li> <li>• Acquire knowledge of ICT and Internet applications.</li> <li>• Develop information technology solutions by evaluating user requirements in advance trends of IT.</li> <li>• Acquire knowledge of MS-Excel, MS-PowerPoint and MS-Access.</li> </ul> |  |
| 6  | Credit Value                   | 3 Credits   | Credit = 15 Hours - Learning & Observation |
| 7  | Total Marks                    | Max. Marks: 100   | Min Passing Marks: 40                      |

**PART-B: Content of the Course**

Total No. of Teaching-Learning Periods (01 Hr. per period) - 45 Periods (45 Hours)

| Unit | Topics (Course contents)   | No. of Period |
|------|--|---------------|
| I    | <b>Introduction to Computer:</b> 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.<br><b>Advanced Trends in IT:</b> 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            |
| II   | <b>MS-Word:</b> 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).   | 11            |
| III  | <b>MS-Excel:</b> 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 Tab: Table, Charts (column chart, Pie chart, Bar chart, Line chart) and Texts (header & footer, word art, signature line). Page Layout Tab:  | 11            |

*(Handwritten signature)*  
28/07/24

Chairman  
 Studies .....  
 Shahood Nandkumar Patil  
 Vishwavidyalaya, Raigarh (C.G.)



Page setup options, Scale to fit (width, height, scale). Formulas Tab: Auto sum (sum, 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. 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.

11

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

**Name and Signature of Convener & Members of CBoS:**

Dr. H.S. Hota  
 Chairman

*(Signatures of other members)*

ANJEETA KUMAR

**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.

Officer-In-Charge (Academic)  
 Shaheed Nandkumar Patel  
 Vishwavidyalaya, Raigarh (C.G.)



**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](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](https://www.w3schools.com/sql/sql_ref_msaccess.asp)
- Fundamentals of Computers & Information Technology (in Hindi) :  
<https://www.mcu.ac.in/wp-content/uploads/2020/04/1PGDCAI-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\\_polytechnic\\_college\\_hanumangarh/uploads/doc/fundamental-final-rkd.pdf](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](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.rgyesm.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**

Suggested Continuous Evaluation Methods:

Maximum Marks: 100 Marks

Continuous Internal Assessment (CIA): 30 Marks

End Semester Exam (ESE): 70 Marks

|  |                                   |   |
|--|-----------------------------------|---|
| Continuous Internal Assessment (CIA):<br>(By Course Teacher) | Internal Test / Quiz-(2): 20 & 20 | Better marks out of the two Test / Quiz obtained marks in Assignment shall be considered against 30 Marks |
|  | Assignment / Seminar - 10         |   |
| Total Marks - 30   |                                   |   |

End Semester Exam (ESE): Two section - A & B  
Section A: Q1. Objective - 10 x1= 10 Mark; Q2. Short answer type- 5x4 =20 Marks  
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. H.S. Hota, Chairman  
Dr. V.K. ...  
Shailendra ...  
Anjeeta Rana

Officer-in-Charge (Academic)  
Shahood Nandkumar Patel  
Vishwavidyalaya, Raigarh (C.G.)



**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

**PART- A: Introduction**

|   |                                |   |  |
|---|--------------------------------|---|--|
| Program: Bachelor of Computer Application<br>(Certificate / Diploma / Degree) |                                | Semester -1   | Session: 2024-2025                                     |
| 1   | Course Code                    | CAGE-01P  |  |
| 2   | Course Title                   | Lab 1: MS-Office  |  |
| 3   | Course Type                    | Practical   |  |
| 4   | Prerequisite                   | As per program  |  |
| 5   | Course Learning Outcomes (CLO) | After Completing this course, students will be able to: <ul style="list-style-type: none"> <li>• Gain Practical knowledge of MS-Office.</li> <li>• Organize files and documents on storage devices.</li> <li>• Acquire knowledge of ICT and Internet applications.</li> <li>• Develop information technology solutions by evaluating user requirements in advance trends of IT.</li> <li>• Acquire knowledge of MS-Excel, MS-PowerPoint and MS-Access.</li> </ul> |  |
| 6   | Credit Value                   | 1 Credits   | Credit =30 Hours Laboratory or Field Learning/Training |
| 7   | Total Marks                    | Max. Marks: 50  | Min-Passing Marks: 20                                  |

**PART -B: Content of the Course**

Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)

| List of Experiments  |  | No. of Period |
|--|--|---------------|
| <b>Application of Information Technology</b>   |  | 30            |
| <ol style="list-style-type: none"> <li>How to create mail in a Gmail account? Write the uses of Inbox, Sent, Outbox, Draft, Spam and Trash labels.</li> <li>How to design Google form? Write the steps with appropriate windows.</li> <li>How to create different student classes in Google classroom.</li> <li>How do teachers create assignments and provide due dates, or grades in Google Classroom?</li> <li>How do students find assignments, due dates, or grades in Google Classroom?</li> <li>How to use social media platforms like twitter, Facebook and YouTube?</li> <li>How to use social media platforms like Flickr, Skype, yahoo and WhatsApp?</li> <li>How to use Google spreadsheets, Google Slides and Google forms?</li> <li>How to share files between mobile phone and computer system/Laptop using Bluetooth.</li> </ol> |  |               |
| *****  |  |               |
| <b>MS-Word</b>   |  |               |
| <ol style="list-style-type: none"> <li>Prepare a grocery list having four columns (Serial number, the name of the product, quantity and price) for the month of April, 06.                             <ul style="list-style-type: none"> <li>➤ Font specific actions for Title (Grocery List):14-pointArialfontinboldanditalics.</li> <li>➤ The headings of the columns should be in 12-point and bold.</li> <li>➤ The rest of the document should be in 10-point Times New Roman.</li> </ul> </li> </ol>   |  |               |

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- Leave a gap of 12-points after the title.
2. Create a telephone directory.
    - The heading should be 16-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 college in 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 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 appear in bold using 20-point Arial font.
    - 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.
  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.

Officer-In-Charge (Academic)  
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 Vishwavidyalaya, Raigarh (G.G.)



| 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

*(Handwritten signature)*  
 18/07/23  
 Chandkumar Patel  
 Vishwavidyalaya, Raigarh (C.G.)



d. Calculate Amount=Rate\*Total.

2. Given the following worksheet

|   | A        | B         | 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 |
|----------------------|------------|
| $\geq 80$            | A+         |
| $\geq 60$ and $< 80$ | A          |
| $\geq 50$ and $< 60$ | B          |
| $< 50$               | F          |

3. Given the following worksheet

|   | A        | B             | C    | 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     |
| $\geq 35000$            | 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  $\leq 1000$
  - 25% of Basic if Basic  $> 1000$  & Basic  $\leq 3000$
  - 20% of Basic if Basic  $> 3000$
- DA Fixed for all employees, 30% of Basic
- Conveyance Allowance(CA)

*(Signature)*  
Shahed Nandkumar Patel  
Vishwavidyalaya, Raigarh (C.G.)

Officer-In-Charge (Qualitative)  
Shahed Nandkumar Patel  
Vishwavidyalaya, Raigarh (C.G.)



Rs.50/- if Basic is  $\leq 1000$   
 Rs.75/- if Basic  $> 1000$  & Basic  $\leq 2000$   
 Rs.100 if Basic  $> 2000$

- Entertainment Allowance (EA)  
 NIL if Basic is  $\leq 1000$   
 Rs.100/-if Basic  $> 1000$

Deductions

- Provident Fund  
 6% of Basic
- Group Insurance Premium  
 Rs.40/-if Basic is  $\leq 1500$   
 Rs.60/-if Basic  $> 1500$  & Basic  $\leq 3000$   
 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

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

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

| Salesman | 2019  | 2020  | 2021   | 2022  |
|----------|-------|-------|--------|-------|
| S1       | 10000 | 12000 | 20000  | 50000 |
| S2       | 15000 | 18000 | 50000  | 60000 |
| S3       | 20000 | 22000 | 70000  | 70000 |
| S4       | 30000 | 30000 | 100000 | 80000 |
| S5       | 40000 | 45000 | 125000 | 90000 |

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

Officer-In-Charge (Academic)  
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 Vishwavidyalaya, Raigarh (C.G.)



- >> 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?
  - 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 |
|----------------|--------------|-------------|--------------|--------------|-------|
| A              | Rs. 1,000.00 | Rs. 1100.00 | Rs. 1,300.00 | Rs. 800.00   |       |
| B              | Rs. 1,500.00 | Rs. 700.00  | Rs. 1,000.00 | Rs. 2,000.00 |       |
| C              | 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.
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:

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Shahad Nandkumar Patel  
Vishwavidyalaya, Raigarh (C.G.)



- Lighthouse Co Ltd
- 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]:
  - i. 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
- d. 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 TVs21"          | 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:

|                 | January | February | March | April |
|-----------------|---------|----------|-------|-------|
| TVs             | 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.

Officer-in-Charge (Academic)  
Shahood Nandkumar Patel  
Vishwavidyalaya, Raigarh (C.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 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 text.
- 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:
  - a. Canary Islands
  - b. Mediterranean
  - c. 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 text.
- 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.
- 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**  
\*\*\*\*\*

1. 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 program as per requirement.

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

Name and Signature of Convener & Members of CBOS:

(Dr. H. S. Hotal)  
(Chairman)

*[Signature]*

*[Signature]*

(Suresh Kumar)

*[Signature]*

(Shelendra)

*[Signature]*

(Dr. V. V. Singh)

*[Signature]*

(Dr. S. Jain)

*[Signature]*

(Anjeeta K. Jua)

**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:

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Vishwavidyalaya, Raigarh (C.G.)  
Officer-in-Charge (Academic)



- <https://www.w3schools.blog/ms-word-tutorial>
- Introduction to MS-Excel from W3school:  
[https://www.w3schools.com/excel/excel\\_introduction.php](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](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\\_polytechnic\\_college\\_hanumangarh/uploads/doc/fundamental-final-rkd.pdf](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](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.rgyesm.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

Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks  
 Continuous Internal Assessment (CIA): 15 Marks  
 End Semester Exam (ESE): 35 Marks

|  |   |            |   |
|--|---|------------|---|
| Continuous Internal Assessment (CIA):<br>(By Course Teacher) | Internal Test / Quiz-(2):                         | 10 & 10    | Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks |
|  | Assignment/Seminar + Attendance -                 | 05         |   |
| Total Marks -  |   | 15         |   |
| End Semester Exam (ESE):                                     | Laboratory / Field Skill Performance:             |            | Managed by Course teacher as per lab. status  |
|  | On spot Assessment                                |            |   |
|  | A. Performed the Task based on lab. work          | - 20 Marks |   |
|  | 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. H.S. Hora  
Chairman

*(Suresh Thakur)*

*(Dr. S. Jain)*

*(Dr. M.K. Gupta)*

*(Anjeta Kujur)*

*(Shankar Prasad)*

*(Dr. M.K. Gupta)*

*(Anjeta Kujur)*

*(Shahid Nandkumar Patel)*  
 Shahid Nandkumar Patel  
 Vishwavidyalaya, Raigarh (C.G.)

Officer-In-Charge (Academic)  
 Shahid Nandkumar Patel  
 Vishwavidyalaya, Raigarh (C.G.)



**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

| <b>PART- A: Introduction</b>   |                                |  |  |
|--|--------------------------------|--|--|
| Program: Bachelor in Computer Application<br>(Certificate / Diploma / Degree/Honors) |                                | Semester - I   | Session: 2024-2025                         |
| 1  | Course Code                    | CAGE-02T   |  |
| 2  | Course Title                   | Operating System   |  |
| 3  | Course Type                    | DGE (Discipline Generic Elective)  |  |
| 4  | Prerequisite                   | As per program   |  |
| 5  | Course Learning Outcomes (CLO) | At the end of this course, the students will be able to: <ul style="list-style-type: none"> <li>• Understand the concept of operating system.</li> <li>• Understand the Disk operating system (DOS).</li> <li>• Work with DOS using DOS commands.</li> <li>• Understand the Windows operating system.</li> <li>• Understand the Linux operating system.</li> </ul> |  |
| 6  | Credit Value                   | 3 Credits  | Credit = 15 Hours - Learning & Observation |
| 7  | Total Marks                    | Max. Marks: 100  | Min Passing Marks: 40                      |

| <b>PART -B: Content of the Course</b>   |   |               |
|---|---|---------------|
| -Total No. of Teaching-Learning Periods (01 Hr. per period) - 45 Periods (45 Hours) |   |               |
| Unit  | Topics (Course contents)  | No. of Period |
| I   | Operating System Concepts: Evolution of Operating Systems, Types of operating systems, Operating system structure, Generations of Operating System, Function and Services of Operating System, System Calls, System Boot, System Programs, Protection and Security of Operating System.   | 12            |
| II  | Disk Operating System: Introduction to DOS, History of DOS, Booting process of DOS, File & directory structure and naming rules, DOS system files. Internal commands of DOS – DIR, CLS, VER, VOL, DATE, TIME, COPY, TYPE, REN, DEL, CD, MD, RD, PATH etc. External Commands - CHKDSK, XCOPY, PRINT, DISKCOPY, DISKCOMP, DOSKEY, TREE, MOVE, LABEL, APPEND, FORMAT, SORT, FDISK, BACKUP, EDIT, MODE, ATTRIB, HELP, SYS.  | 11            |
| III   | Windows: Windows Operating System: History, Version and features of Windows, Basics of Windows, Windows concepts, Windows Structure, Desktop, Taskbar, Start Menu, working with files and folders, create, copy, delete, renaming and moving files and folders, working with recycle bin restoring deleted files, emptying the recycle bin, searching files and folders. Windows Explorer, Windows Accessories, Control Panel, Print Manager and Installing Printers. My computer, Media Player, Sound Recorder, Volume Control. Advanced features of Windows - Managing Hardware & Software Add or remove Hardware devices to/from computer, Add/remove programs, Backup, Clipboard Viewer, Disk Defragmenter, Drive Space, Scandisk, System Information windows update. | 11            |
| IV  | Linux: Linux introduction, Advantages, Features of Linux, Basic Architecture of Unix/Linux system, Kernel, Shell, Linux File system, Linux standard directories. Partitioning the Hard drive for-Linux, Installing the Linux system, System, startup and shut-down process, How Linux works, Linux GUI, Linux Desktop, Linux command cd, md, rm, mv, cp, ls, cat, find, grep, head, and tail.   | 11            |

Keywords: Operating System, DOS, Windows, Linux.

Name and Signature of Convener & Members of CBoS:

Dr. Ashish Kumar Patra (Chairman) [Signature]

Dr. S. S. Jain [Signature]

Shailendra Prasad [Signature]

ANJELITA KUMAR [Signature]

Officer-in-Charge (Academics)  
 Shaheed Nandkumar Patra  
 Shaheed Vidyalaya, Raigarh (C.O.)







**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

**PART- A: Introduction**

|   |                                |  |  |
|---|--------------------------------|--|--|
| Program: Bachelor in Computer Application<br>(Certificate / Diploma / Degree) |                                | Semester - I   | Session: 2024-2025                                     |
| 1   | Course Code                    | CAGE-02P   |  |
| 2   | Course Title                   | Lab 2: Operating System  |  |
| 3   | Course Type                    | Practical  |  |
| 4   | Prerequisite                   | As per program   |  |
| 5   | Course Learning Outcomes (CLO) | At the end of this course, the students will be able to: <ul style="list-style-type: none"> <li>• Understand the fundamental concepts of DOS, Windows and Linux Operating System.</li> <li>• Understand basics of DOS commands and its types.</li> <li>• Understand features of Windows Operating system.</li> <li>• Understand comparative features of DOS and Windows Operating systems.</li> <li>• Explore functionality of Linux.</li> </ul> |  |
| 6   | Credit Value                   | 1 Credits  | Credit =30 Hours Laboratory or Field Learning/Training |
| 7   | Total Marks                    | Max. Marks: 50   | Min Passing Marks: 20                                  |

**PART -B: Content of the Course**

Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)

| Module                       | Topics (Course contents)  | No. of Period |
|------------------------------|---|---------------|
| List of Practical Experiment | <ol style="list-style-type: none"> <li>1. Demonstrate different Directory naming listing structure with all options.</li> <li>2. Create one file and rename file using DOS command</li> <li>3. Demonstrate all Internal DOS Commands with Output.</li> <li>4. Demonstrate all external DOS Commands with output.</li> <li>5. Introduction to Windows and Familiarity with its controls.</li> <li>6. Study and use of Desktop, my computer, recycle bin, Task bar.</li> <li>7. Working with Files and Folder.</li> <li>8. Use of various window applications: Calculator, notepad and MS-Paint.</li> <li>9. Explaining control panel options.</li> <li>10. Working with printers.</li> <li>11. Create a file using Linux command.</li> <li>12. Write a Linux command which lists all files and directories.</li> <li>13. Demonstrate use of grep command.</li> <li>14. Create Directory using Linux command and create 3 different files in this directory.</li> <li>15. Delete above created files and directory using Linux command.</li> <li>16. Explaining various flavors of Linux.</li> </ol> <p>Note: Concerned teacher can add additional experiment as per requirement.</p> | 30            |

Keywords: DOS, Windows, Linux.

Name and Signature of Convener & Members of CBoS:

Dr. H.S. Hota  
Chairman

Janki

Shri. S. S. Hota  
Shri. S. S. Hota

Shri. S. S. Hota

Dr. S. S. Hota

Shri. S. S. Hota

Shri. S. S. Hota

Shri. S. S. Hota

ANJEETA KUTUR

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 Shaheed Nandkumar Patel  
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## PART-C: Learning Resources

### Text Books, Reference Books and Others

#### Text Books Recommended:

- Rusell A Stultz, MS DOS 6.22 BPB Publications
- Brain Underdahl, Teach yourself Windows 2000, Wiley Publications.

#### Reference Books Recommended:

- Peter Norton, Maximizing Windows, Teachmedia.
- Ray Duncan, Advances MS-DOS Programming, BPB
- Akshay Singh, Operating System, RGCSM Publications
- Ray Yao, Shell Scripting in 8 Hours

#### Online Resources:

- DOS: <https://www.javatpoint.com/ms-dos-operating-system>
- Windows: <https://www.javatpoint.com/windows>
- Linux: <https://www.javatpoint.com/what-is-linux>
- Fundamentals of Computer, Windows Operating System:  
<https://vikaspedia.in/education/digital-literacy/it-literacy-courses-in-associating-with-msup/computer-fundamentals>
- DOS: <https://www.geeksforgeeks.org/ms-dos-operating-system/>

## PART -D: Assessment and Evaluation

### Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks

Continuous Internal Assessment (CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

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

### Name and Signature of Convener & Members of CBoS:

Dr. H.S. Hota  
Chairman

Kiran [Signature]  
[Signature]  
Shree K. Kulkarni

[Signature]  
Dr. S. Jain

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## 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.

#### Reference Books Recommended:

- Artificial Intelligence and machine learning, Vinod Chandra S.S., Anand Hareendrn 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=PLwdnzlV3ogoXaceHrrFVZCJKbm\\_laSHcH&index=2](https://www.youtube.com/watch?v=pKeVMlkFpRc&list=PLwdnzlV3ogoXaceHrrFVZCJKbm_laSHcH&index=2)
- An introduction to Artificial Intelligence from SWAYAM:  
[https://onlinecourses.nptel.ac.in/noc24\\_cs08/preview](https://onlinecourses.nptel.ac.in/noc24_cs08/preview)
- Introduction to Artificial Intelligence from Coursera:  
<https://www.coursera.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: Assessment and Evaluation

### Suggested Continuous Evaluation Methods:


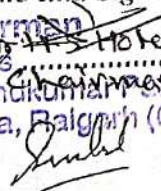
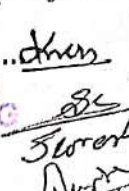
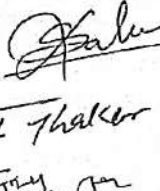
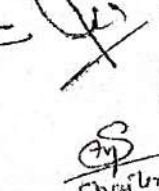
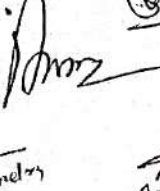
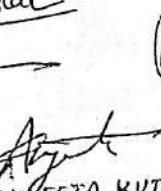
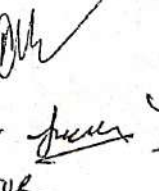
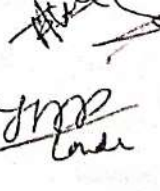
Maximum Marks: 50 Marks

Continuous Internal Assessment(CIA): 15 Marks

End Semester Exam(ESE): 35 Marks

|  |  |   |
|--|--|---|
| Continuous Internal Assessment (CIA):<br>(By Course Teacher) | Internal Test / Quiz-(2): 10 + 10  | Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks |
|  | Assignment/Seminar- 05<br>Total Marks - 15   |   |
| End Semester Exam (ESE):                                     | Laboratory/Field Skill Performance: On spot Assessment<br>A. Performed the task based on learned skill - 20 Marks<br>B. Spotting based on tools (Written) - 10 Marks<br>C. Viva-voce (based on principle/technology)- 05 Marks | Managed by Coordinator as per skilling  |

### Name and Signature of Convener & Members of CBoS:

Chairman:   
 Convener:   
 Members:       

ANSHEETA KUMAR  
 SHREYANSHI AGARWAL  
 SHREYANSHI AGARWAL  
 SHREYANSHI AGARWAL  
 SHREYANSHI AGARWAL  
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**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF COMPUTER APPLICATION**  
**COURSE CURRICULUM**

| <b>PART-A: Introduction</b>  |                               |  |
|--|-------------------------------|--|
| Program: Bachelor in Computer Application<br>(Certificate / Diploma / Degree/Honors) |                               | Semester – II/IV/V/VI  |
| Session: 2024-2025   |                               |  |
| 1  | Course Code                   | CASEC-01   |
| 2  | Course Title                  | ICT Based Learning   |
| 3  | Course Type                   | SEC (Skill Enhancement Course)   |
| 4  | Prerequisite                  | As per program   |
| 5  | Course Learning Outcomes(CLO) | At the end of this course, students will be able to: <ul style="list-style-type: none"> <li>• Understand the concept of ICT.</li> <li>• Understand the concept of Blended learning.</li> <li>• To provide knowledge about various OER resources</li> <li>• Create document using tools word, Google Docs</li> <li>• Learn about various Google tools.</li> </ul> |
| 6  | Credit Value                  | 2 Credits (IC+IC)<br>Credit =15 Hours Theoretical Learning and = 30 Hours Laboratory or Field Learning/Training  |
| 7  | Total Marks                   | Max. Marks: 50<br>Min Passing Marks: 20  |

**PART – B: Content of the Course**

Total No. of Teaching– Learning Periods (01 Hr. per period) - 30 Periods (30 Hours)

| Unit                       | Topics (Course contents)  | No. of Period |
|----------------------------|---|---------------|
| Theory Content             | 1. <b>ICT in Education:</b> Concept & Importance of ICT, Need of ICT in Education.<br>2. <b>Blended Learning:</b> Introduction, terminology, types of Blended Learning Models, Advantages and Disadvantages, Benefits of Blended Learning.<br>3. <b>E-Learning and Web Based Learning:</b> E-Learning, Web Based Learning, Virtual Classroom, EDUSAT.<br>4. <b>Open Educational Resources:</b> Introduction, Advantages & Disadvantages of OER, OER Tools Like Google Classroom, various OER. | 15            |
| Lab/Field Training Content | <b>Presentation Tools –</b> MS Word, MS Excel, MS PowerPoint, WPS Office.<br><b>Google Tools-</b> Google Forms, Google Classroom, Google Meet, Google Docs, Google Sheet, Google Slides.<br><b>Meeting Management Tools-</b> Different Types of Meeting Tools Like Google Meet, Zoom, Skype etc.  | 30            |

Keywords: Blended Learning, Open Educational Resource, Google.

Name and Signature of Convener & Members of CBoS:

Dr. H.S. Achta  
Chairman

Nandkumar Patel  
Member

Dr. ...  
Member

Dr. ...  
Member

Dr. ...  
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Member

Dr. ...  
Member

Officer-in-Charge (Academic)  
Shahad Nandkumar Patel  
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## PART-C: Learning Resources

Text Books, Reference Books and Others

### Text Books Recommended:

- Agarwal J.P. (2013): Modern Educational Technology. Black Prints, Delhi.
- Barton, R. (2004). Teaching Secondary Science with ICT. McGraw Hill International.

### Reference Books Recommended:

- Bhaskar Rao (2013): Samachara Prasara Sankethika vidya Shastramu, Masterminds, Guntur.
- Cambridge, D. (2010). E-Portfolios for Lifelong Learning and Assessment. John Wiley and Sons.

### Online Resources:

- <https://www.unesco.org/en/communication-information/open-solutions/open-educational-resources>
- National Digital Library of India : <https://www.ndl.gov.in/>
- SWAYAM PORTAL: <https://www.swayam.gov.in>
- E-Gyankosh: <https://egyankosh.ac.in/>

## PART-D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks

Continuous Internal Assessment(CIA): 15 Marks

End Semester Exam(ESE): 35 Marks

|   |  |   |
|---|--|---|
| Continuous Internal Assessment(CIA):<br>(By Course Teacher) | Internal Test / Quiz-(2): 10 + 10  | Better marks out of the two Test / Quiz +<br>obtained marks in Assignment shall be<br>considered against 15 Marks |
|   | Assignment/Seminar- 05<br>Total Marks - 15   |   |
| End Semester Exam (ESE):                                    | Laboratory/Field Skill Performance: On spot Assessment<br>A. Performed the task based on learned skill - 20 Marks<br>B. Spotting based on tools (Written) - 10 Marks<br>C. Viva-voce (based on principle/technology)- 05 Marks | Managed by<br>Coordinator as per<br>skilling  |

Name and Signature of Convener & Members of CBoS:

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Shri. Umesh Singh

Dr. Anand

Dr. J.P. Singh

Dr. Suresh

Dr. Anand

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