

SHRI GNANAMBICA DEGREE COLLEGE: MADANAPALLE



(AUTONOMOUS)
Course1: BASICS OF COMPUTERS AND OFFICE AUTOMATION
SEMESTER I
(W.E.F.2025-26)
Program: BCA (ALL Groups)



Hours per week: 4

Credits: 3

Course Objectives:

1. Learn computing basics: number systems, evolution, block diagrams, generations.
2. Understand computer architecture and networking fundamentals.
3. Develop skills in document creation, formatting, spreadsheets, and presentations.
4. Explore data visualization and basic modelling for analytical thinking.

Course Outcomes:

Upon successful completion of the course, students will be able to:

1. At the End of the Course, The Students will be able to explain different number systems, the historical evolution of computers, and identify key components in a block diagram.
2. Learners will demonstrate basic blocks of a computer and fundamental networking knowledge.
3. Learners will create professional-level documents and design visually appealing presentation using word processing software and presentation software.
4. Learners will manipulate data within spreadsheets, apply formulas, and generate accurate summaries and visualizations.
5. Learners will apply data modelling techniques to analyze, organize, and represent data effectively in various scenarios.

Unit 1

Number Systems, Evolution, Block Diagram and Generations:

Number Systems: Binary, Decimal, Octal, Hexadecimal; conversions between number systems. Evolution of Computers: History from early mechanical devices to modern-day systems. Block Diagram of a Computer: Components like Input Unit, Output Unit, Memory, CPU (ALU + CU). Generations of Computers: First to Fifth Generation – technologies characteristics, examples.

Unit 2

Basic organization and Network fundamentals:

Computer Organization: Functional components – Input/Output devices, Storage types, Memory hierarchy. Types of Computers: Micro, Mini, Mainframe, and Supercomputers. Networking Fundamentals: Definition, need for networks, types (LAN, WAN, MAN), topology (Star, Ring, Bus). Internet Basics: IP Address, Domain Name, Web Browser, Email, WWW.



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Unit 3

Word Processing and presentations:

Word Processing Basics: Using MS Word/Google Docs – formatting, styles, tables, merge. Presentation Tools: Using PowerPoint/Google Slides – slide design, animations, transitions. Applications: Creating resumes, reports, brochures, and presentations. Keyboard Shortcuts.

Unit 4

Spreadsheet Basics:

Spreadsheet Concepts: Understanding rows, columns, cells in tools like MS Excel/Google Sheets, cell referencing. Functions and Formulae: SUM, AVERAGE, IF, COUNT. Charts and Graphs: Creating visual representations. Data Handling: Sorting, filtering, conditional formatting.

Text Functions: LEFT, RIGHT, MID, LEN, TRIM, CONCAT, TEXTJOIN. Advanced Functions: Logical: IF, AND, OR, IFERROR, Lookup: VLOOKUP, HLOOKUP, XLOOKUP, INDEX, MATCH.

Unit 5

Data Analysis and Visualization:

Conditional Formatting: Custom rules, Color scales, Icon sets, Data bars. Data Analysis Tools: Pivot Tables and Pivot Charts, Data Validation (Drop-downs, Input Messages, Error Alerts), WhatIf Analysis: Goal Seek, Scenario Manager, Data Tables. Charts and Dashboards: Creating Interactive Dashboards, Using slicers with Pivot Tables, Combo Charts and Sparkline. Productivity Tips: Using Named Ranges, Freeze Panes, Split View.

Reference Books:

1. Excel 2021 Bible by Michael Alexander, Richard Kusleika – Wiley
2. Networking All-in-One For Dummies by Doug Lowe – Wiley
3. Microsoft Official Docs and Training: <https://learn.microsoft.com>
4. Google Workspace Learning Center: <https://support.google.com/a/users/>
5. Fundamentals of Computers, Reema Thareja, Oxford University Press, Second Edition
6. Fundamentals of Computers, V. Rajaraman – PHI Learning
7. Introduction to Computers by Peter Norton – McGraw Hill
8. Microsoft Office 365 In Practice by Randy Nordell – McGraw Hill Education



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(AUTONOMOUS)

Course 1: BASICS OF COMPUTERS AND OFFICE AUTOMATION –
PRACTICALS
SEMESTER I

(W.E.F.2025-26)

Program: BCA (ALL Groups)



Hours per week: 2

Credits: 1

List of Experiments:

1. Demonstration of Assembling and Desassembling of Computer Systems.
2. Identify and prepare notes on the type of Network topology of your institution.
3. Prepare your resume in Word.
4. Using Word, write a letter to your higher official seeking 10-days leave.
5. Prepare a presentation that contains text, audio and video.
6. Using a spreadsheet, prepare your class Time Table.
7. Using a Spreadsheet, calculate the Gross and Net salary of employees (Min 5) considering all the allowances.
8. Generate the class-wise and subject-wise results for a class of 20 students. Also generate the highest and lowest marks in each subject.
9. Using IF, AND, OR, and IFERROR to Automate Grade Evaluation.
 - Create a table of student scores in different subjects.
 - Use IF to assign grades (A/B/C/Fail).
 - Use IFERROR to handle missing scores or invalid data.
10. Employee Database Search Using VLOOKUP, HLOOKUP, XLOOKUP, INDEX, and MATCH
 - Create a database of employees (Name, ID, Department, Salary).
 - Implement VLOOKUP to search by employee ID.
 - Use HLOOKUP to extract department heads by role.
 - Apply XLOOKUP for more flexible searches.
 - Use INDEX + MATCH as an alternative to VLOOKUP.
11. Sales Report Analysis Using Pivot Tables and Charts
 - Use a dataset of product sales (Product, Region, Date, Quantity, Revenue).
 - Create Pivot Tables to summarize data by region/product.
 - Insert Pivot Charts for visual analysis (e.g., bar, line).
 - Add slicers to make the dashboard interactive.



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12. Designing a Data Entry Form with Drop-downs and Input Rules

- Create a student registration form.
- Add drop-down lists for course selection using Data Validation.
- Add input messages to guide users.
- Add error alerts for wrong entries.

13. Monthly Budget Planning using Goal Seek and Scenario Manager

- Create a simple personal budget (income, expenses, savings).
- Use Goal Seek to determine income needed to save a desired amount.
- Use Scenario Manager to compare different budgeting scenarios (best/ worst/ realistic case).
- Create a one-variable Data Table to analyze how different expenses affect savings.

14. Dashboard Creation Using Combo Charts, Sparklines & Slicers

- Use existing sales or attendance data.
- Insert combo charts (e.g., column + line).
- Add sparklines to show trends.
- Use slicers with Pivot Tables to control dashboard elements.
- Finalize and format for interactivity.



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BASICS OF COMPUTERS AND OFFICE AUTOMATION

SEMESTER I

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Program: BCA (All Groups)

QUESTION PAPER BLUE PRINT

Time : 3 Hrs

Max. Marks : 70

PART - A

Answer any 4 of the 8. Each Question Carries 5 marks.

(4 x 5 =20)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

PART-B

Answer one from each unit. Each Question Carries 10 marks.

(5X10=50)

UNIT 1

1. Question

OR

2. Question

UNIT 2

3. Question

OR

4. Question

UNIT 3

5. Question

OR

6. Question

UNIT 4

7. Question

OR

8. Question

UNIT 5

9. Question

OR

10. Question



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