Y.A. Government College(W), Chirala

Dept. of Computer Science

CO–PO–PSO MAPPING DOCUMENT
(Outcome Based Education – OBE Framework)

Academic Year: 2025–2026

DEPARTMENT OF COMPUTER SCIENCE

ACADEMIC YEAR: 2025–2026

PROGRAMME OUTCOMES (POs)

(B.Sc. – Computer Science)

After completion of B.Sc. Computer Science Programme, students will be able to:

PO1: Computational Knowledge
Apply knowledge of mathematics, computing fundamentals, and programming to solve real-world problems.

PO2: Problem Analysis
Identify, analyze, and formulate computing problems using appropriate algorithms and data structures.

PO3: Design & Development of Solutions
Design and develop software applications using modern programming languages and tools.

PO4: Modern Tool Usage
Use contemporary tools, technologies, and platforms such as DBMS, Java, Python, Web Technologies, and Data Science tools.

PO5: Ethics & Professional Responsibility
Understand professional ethics, cyber laws, and social responsibilities in computing practices.

PO6: Environment & Sustainability
Apply computing solutions considering environmental and societal impact.

PO7: Individual & Team Work
Function effectively as an individual and as a member/leader in diverse teams.

PO8: Communication Skills
Communicate effectively through reports, presentations, and documentation.

PO9: Lifelong Learning
Engage in independent and lifelong learning in the context of technological advancements.

PO10: Employability & Entrepreneurship
Demonstrate skills required for employment, higher education, research, and entrepreneurship.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

(B.Sc. Computer Science)

After completion of the programme, students will be able to:

PSO1: Develop efficient programs using C, Java, and Python.
PSO2: Design and implement data structures and database systems.
PSO3: Apply software engineering principles in application development.
PSO4: Develop web and mobile applications using modern technologies.
PSO5: Apply data analytics, machine learning, and visualization techniques.
PSO6: Analyze and implement networking and operating system concepts.

COURSE OUTCOMES (COs)

(B.Sc. Computer Science)

SEMESTER – I

Course 1: Computer Fundamentals and Office Automation

CO1: Explain number systems, generations of computers, and computer organization.
CO2: Describe computer architecture and basic networking concepts.
CO3: Create professional documents and presentations using office tools.
CO4: Apply spreadsheet formulas, functions, and charts for data analysis.
CO5: Design interactive dashboards using data visualization techniques.

Course 2: Problem Solving Using C

CO1: Understand programming fundamentals and write structured C programs.
CO2: Apply control statements to solve logical and iterative problems.
CO3: Implement arrays and strings for data manipulation.
CO4: Develop modular programs using functions and recursion.
CO5: Apply pointers, dynamic memory allocation, and file handling concepts.

SEMESTER – II

Course 3: Data Structures Using C

CO1: Explain algorithm analysis and asymptotic notations.
CO2: Implement singly, doubly, and circular linked lists.
CO3: Develop stack and queue operations using arrays and linked lists.
CO4: Apply searching and sorting algorithms efficiently.
CO5: Construct and traverse trees and graphs.

Course 4: Digital Logic Design

CO1: Perform radix conversions and binary arithmetic operations.
CO2: Simplify Boolean expressions using K-map and Boolean laws.
CO3: Design combinational circuits like adders and subtractors.
CO4: Implement multiplexers, encoders, and decoders.
CO5: Design sequential circuits using flip-flops and counters.

SEMESTER – III

Course 5: OOPS Through Java

CO1: Apply object-oriented principles in Java programming.
CO2: Develop Java programs using arrays, classes, and methods.
CO3: Implement inheritance, interfaces, and exception handling.
CO4: Develop multithreaded and file handling applications.
CO5: Design GUI applications using Swing and event handling.

Course 6: Database Management Systems

CO1: Explain DBMS architecture and data models.
CO2: Design ER and Enhanced ER diagrams.
CO3: Apply relational algebra and normalization techniques.
CO4: Write SQL queries for data definition and manipulation.
CO5: Develop PL/SQL programs with procedures and triggers.

Course 7: Computer Organization

CO1: Explain register transfer language and micro-operations.
CO2: Describe CPU architecture and control unit design.
CO3: Analyze memory hierarchy and cache mapping techniques.
CO4: Explain I/O organization and DMA concepts.
CO5: Apply arithmetic algorithms and floating-point operations.

SEMESTER – IV

Course 8: Operating Systems

CO1: Explain OS structure and types of operating systems.
CO2: Analyze process scheduling and thread management.
CO3: Apply synchronization and deadlock handling techniques.
CO4: Implement memory management strategies.
CO5: Explain file systems, disk scheduling, and I/O management.

Course 9: Computer Networks

CO1: Explain OSI and TCP/IP models.
CO2: Describe data transmission and switching techniques.
CO3: Analyze routing and network layer protocols.
CO4: Implement transport and application layer protocols.
CO5: Identify network security mechanisms.

Course 10: Python Programming

CO1: Understand Python syntax and control structures.
CO2: Implement functions, modules, and file handling.
CO3: Apply object-oriented concepts in Python.
CO4: Use Python libraries for data processing.
CO5: Develop real-time applications using Python.

SEMESTER – V

Course 11: Software Engineering

CO1: Explain SDLC models and software process frameworks.
CO2: Perform requirement analysis and system design.
CO3: Apply software testing techniques.
CO4: Implement project management practices.
CO5: Develop documentation and maintenance plans.

Domain A – Web Technologies

Course 12A: Web Interface Design Technologies

CO1: Design responsive web pages using HTML and CSS.
CO2: Implement client-side scripting using JavaScript.
CO3: Apply UI/UX principles in web design.
CO4: Use frameworks for front-end development.
CO5: Deploy dynamic web pages.

Course 13A: Web Application Development using PHP & MySQL

CO1: Develop server-side applications using PHP.
CO2: Design database-driven applications using MySQL.
CO3: Implement CRUD operations.
CO4: Apply session and cookie management.
CO5: Deploy full web applications.

Domain B – Data Science

Course 12B: Data Science with R

CO1: Understand R programming fundamentals.
CO2: Apply statistical techniques in R.
CO3: Perform data visualization.
CO4: Analyze datasets using R packages.
CO5: Build predictive models.

Course 13B: Python for Data Science

CO1: Use NumPy and Pandas for data analysis.
CO2: Perform data cleaning and preprocessing.
CO3: Apply visualization using Matplotlib/Seaborn.
CO4: Implement basic ML algorithms.
CO5: Analyze real-world datasets.

SEMESTER – VI

Domain A

Course 14A: Mobile Application Development

CO1: Design mobile UI components.
CO2: Develop Android applications.
CO3: Implement database connectivity.
CO4: Integrate APIs and services.
CO5: Deploy mobile apps.

Course 15A: MERN Stack

CO1: Develop applications using MongoDB.
CO2: Build REST APIs using Express & Node.js.
CO3: Design front-end using React.
CO4: Integrate full-stack applications.
CO5: Deploy full-stack projects.

Course 13A: Web Application Development using PHP & MySQL

CO1: Develop server-side applications using PHP.
CO2: Design database-driven applications using MySQL.
CO3: Implement CRUD operations.
CO4: Apply session and cookie management.
CO5: Deploy full web applications.

Domain B – Data Science

Course 12B: Data Science with R

CO1: Understand R programming fundamentals.
CO2: Apply statistical techniques in R.
CO3: Perform data visualization.
CO4: Analyze datasets using R packages.
CO5: Build predictive models.

Course 13B: Python for Data Science

CO1: Use NumPy and Pandas for data analysis.
CO2: Perform data cleaning and preprocessing.
CO3: Apply visualization using Matplotlib/Seaborn.
CO4: Implement basic ML algorithms.
CO5: Analyze real-world datasets.

SEMESTER – VI

Domain A

Course 14A: Mobile Application Development

CO1: Design mobile UI components.
CO2: Develop Android applications.
CO3: Implement database connectivity.
CO4: Integrate APIs and services.
CO5: Deploy mobile apps.

Course 15A: MERN Stack

CO1: Develop applications using MongoDB.
CO2: Build REST APIs using Express & Node.js.
CO3: Design front-end using React.
CO4: Integrate full-stack applications.
CO5: Deploy full-stack projects.

Domain B

Course 14B: Data Visualization Tools

CO1: Apply visualization principles.
CO2: Use tools like Tableau/Power BI.
CO3: Create dashboards and reports.
CO4: Analyze business data visually.
CO5: Interpret insights from data.

Course 15B: Machine Learning

CO1: Explain ML concepts and algorithms.
CO2: Implement supervised learning models.
CO3: Apply unsupervised learning techniques.
CO4: Evaluate model performance.
CO5: Develop ML-based applications.

PRINCIPAL
Y.A. Govt. College for Women
CHIRALA, Bapatla Dist., (A.P)

GOVERNMENT COLLEGE FOR WOMEN - Y.A. CHIRALA

DECLARATION BY STUDENTS

We, the students of B.Sc. Computer Science (Major), hereby declare that we have understood the Programme Outcomes (POs), Programme Specific Outcomes (PSOs), and Course Outcomes (COs) for the Academic Year 2025–2026.

We are aware of the academic expectations, learning objectives, and skill development goals of this programme.

We commit to actively participate in academic, laboratory, and project activities to achieve the stated outcomes.

Sl. NO	NAME OF THE STUDENT	OAMDC NO	MOBILE NUMBER	SIGNATURE OF THE STUDENT
1	PERAM PAVANA SRIYA	OAMDC2221025	6302488571	P. Pavana Sriya
2	RAMANADHAM VENKATA LAKSHMI TEJASWINI	OAMDC0022025	6303166960	R.V.L.Tejaswini
3	DAIVALA POLERAMMA	OAMDC2192414	6281652059	D. Poleramma
4	INAGANTI ESWARI	OAMDC0017373	9390629226	I. Eswari
5	JALLA RATNAM	OAMDC0026017	9701744317	J. Ratnam
6	GORANTLA PAVANI	OAMDC0017043	9014258784	G. Pavani
7	ARJILLI THERISSA	OAMDC0016449	7207298270	A. Therissa
8	BANDI LALITHA	OAMDC0016687	7842803516	B. Lalitha
9	PARIMI SOWJANYA	OAMDC0015671	7032796947	Sowjanya.P
10	PALLAPROLU NAGA AMRUTHA VARSHINI	OAMDC2232597	7032237233	P.N.A.varshini
11	ENJAPALLI MAHITHA	OAMDC2245477	6301783830	E. Mahitha
12	P PARAMESWARI	OAMDC0018778	8008840628	P. Parameswari
13	ANGALAKUDURU RATNA	OAMDC0019035	9347315838	A. Ratna Priya
14	VEMAVARAPU BRAHMANI	OAMDC0017167	6305235517	V Brahmani
15	KURAKULA SOWJANYA	OAMDC0017636	7207044363	K. Sowjanya
16	PAPABATHINA NAVYA	OAMDC2103504	8142701087	P. Navya
17	MEESALA VANI	OAMDC0018856	9948929059	M. Vani
18	KANUKULURI RAAJITHA	OAMDC2216885	9063917879	K. Raajitha
19	BUCHIRAJU PRAVALLIKA	OAMDC0019503	8897875069	B. Pravallika
20	VALLAGI KEERTHANA	OAMDC2253418	8374488749	V. Keerthana
21	USURUPATI SAROJINI	OAMDC0018183	7416352699	U. Sarojini
22	CHELLI JANAKI DEVI	OAMDC0043106	9347457402	Ch. Janaki devi
23	THATITHOTI ASWITHA	OAMDC0021289	8179735578	T. Aswitha
24	DOPPALAPUDI KIRANMAI	OAMDC2127365	6301257790	D. Kiranmai
25	GANJI RAMYA	OAMDC0026583	9032084038	G. Ramya
26	KONDETI KEERTHI	OAMDC0025061	6309835957	K. Keerthi
27	CHENNURI POOJAMANI	OAMDC0044913	6372322683	Ch. Poojamani
28	SHAIK GULSHAN	OAMDC0020290	9030833601	SK. Gulshan
29	KUKKALA NAGA JYOSTNAVI	OAMDC0021726	8978330524	K. Naga Jyothsnavi
30	MACHARLA VENKATA SRAVYA	OAMDC0018589	8328372055	M. Venkata Sravya
31	NALLAMALLI VENKATA YASASWI	OAMDC0018318	6303647895	N. V. Yasaswi
32	KORUKONDA RAMYA SRI	OAMDC0025896	9550586936	K. Ramyasri
33	AVVARU LAHARI	OAMDC0021309	9110782929	A. Lahari
34	MANDE PREETHI	OAMDC0020224	7093539483	M. Preethi
35	ANGALAKUDURU JYOTHI SRI	OAMDC0040365	8143837813	A. Jyothi Sri

Y.A. GOVT. COLLEGE FOR WOMEN - CHIRALA

PRINCIPAL
Y.A. Govt. College for Women
CHIRALA, Bapatla Dist., (A.P.)