D. S. GOVERNMENT COLLEGE (W), ONGOLE
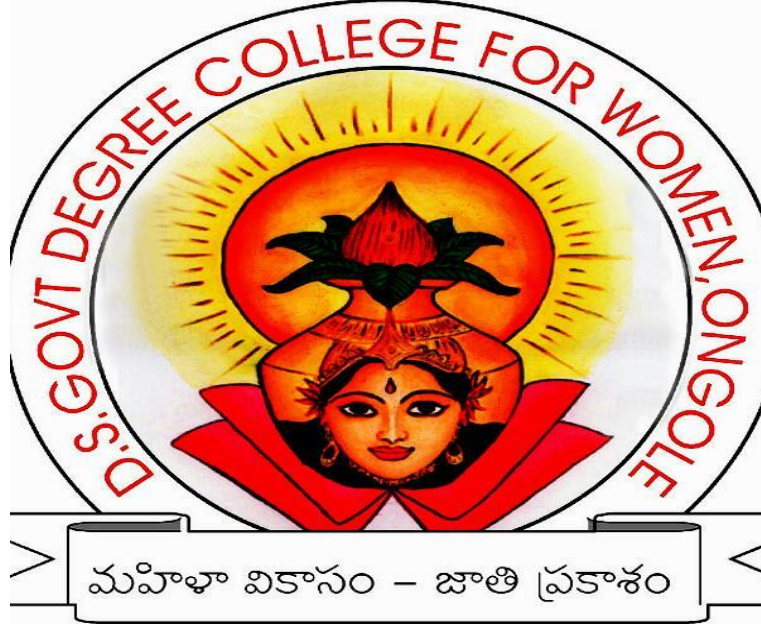
DEPARTMENT OF COMPUTER SCIENCE

CO – PO MAPPING

(W. E. F 2020-21)

For

B.Sc. (Cloud Computing)

D. S. GOVERNMENT COLLEGE (W), ONGOLE.

Vision

To become a center of educational excellence for empowering women in different fields of life by realizing their capabilities so that they can take their rightful place in the society.

Mission

- To inculcate the spirit of quality in higher education.
- To trigger skills related to education and life.
- To enhance physical wellbeing.
- To promote social awareness and community service.
- To enlighten women empowerment.
- To Inculcate values for betterment of women.
- To train the students for academic competition.

DEPARTMENT OF COMPUTER SCIENCE

B.Sc. (CLOUD COMPUTING)

Vision

To foster teaching environments that will enable graduates to become technologically savvy, creative, self-driven, and responsible citizens who also possess human values.

Mission

- To attain academic success by giving students in-depth instruction and practical exposure with the newest tools and technologies.

- Our diligent faculty should employ efficient teaching techniques in order to realise the vision.

- To generate successful graduates who are committed to continuing learning and who have both personal and professional responsibilities.

- Providing a solid theoretical and practical foundation for the field of computer science, with a focus on software development.

- To offer top-notch computer science instruction that will enable our graduates to compete in the job market and to further the social, scientific, and economic advancement of the State of Andhra Pradesh and the Nation.

PROGRAM OUTCOMES

1. Acquire a comprehensive understanding of domain-specific knowledge and demonstrate their acquired skills effectively during practical transactions within the specific domain.

2. Demonstrate proficient analytical and problem-solving skills through the application of critical thinking strategies to address real-world situations effectively.

3. Master effective communication, collaborate skillfully with diverse stakeholders, nurture meaningful dialogues, build strong professional bonds in and beyond college.

4. Exhibit proficiency in ethically using information from diverse sources, analyzing and synthesizing data effectively for real-world research.

5. Exemplify ethical standards in personal and professional contexts, appreciate diverse cultures, evaluate social responsibility's impact on well-being, and advocate for women students' betterment.

6. Actively promote social awareness through community service, contributing to a more inclusive and compassionate global community.

7. Embrace continuous learning, create professional growth chances, and prioritize personality development and physical well-being for a holistic approach.

8. Foster self-confidence, advocate women empowerment, demonstrate expertise for growth in studies, employment, and entrepreneurship, creating a brighter and equitable future.

PROGRAM SPECIFIC OUTCOMES

1. Acquire good knowledge and understanding in advanced areas of mathematics and statistics, chosen by the student from the given courses.

2. Design, implements, test, and evaluate a computer system, component, or algorithm to meet desired needs and to solve a computational problem

3. Demonstrate understanding of the principles and working of the hardware and software aspects of computer systems

4. Acquire the fundamental ideas behind Cloud Computing, the evolution of the paradigm, its applicability; benefits, as well as current and future challenges

5. Understand the key security and compliance challenges of cloud computing

REVISED SYLLABUS OF B.Sc. (Cloud Computing)
UNDER CBCS FRAMEWORK WITH EFFECT FROM 2020-2021

PROGRAMME: THREE-YEAR B.Sc (Maths – Computer Science – Cloud Computing)

Semester	Paper	Subject	Hrs.	Credits	IA	ES	Total
		FIRST YEAR					
SEMESTER I	I	Basics of Cloud Computing (Google, Amazon, IBM, Red hat, Microsoft, Sales force)	4	3	25	75	100
		Cloud Computing Lab	2	2	0	50	50
SEMESTER II	II	Cloud Computing Services	4	3	25	75	100
		HTML / CSS and Java Script Lab	2	2	0	50	50
		SECOND YEAR					
SEMESTER III	III	Application development on Cloud Computing	4	3	25	75	100
		Cloud based Application Development Lab	2	2	0	50	50
SEMESTER IV	IV	APEX & Visual force Programming	4	3	25	75	100
		APEX and Visual force Lab	2	2	0	50	50
	V	Business Intelligence	3	3	25	75	100
		Business Intelligence Lab	2	2	0	50	50

Univ. Code	Courses 6 & 7	Name of Course	Th. Hrs. / Week	IE Mar - ks	EE Mar - ks	Credits	Prac.Hrs./ Wk	Mar - ks	Credits
	6A	SOAP Integration for SaaS	3	25	75	3	3	50	2
	7A	REST Integration for SaaS	3	25	75	3	3	50	2
		OR							
	6B	AWS Compute Services	3	25	75	3	3	50	2
	7B	AWS Storage Services	3	25	75	3	3	50	2

COURSE 1A: BASICS OF CLOUD COMPUTING

COURSE OUTCOMES

1. Develop a foundational grasp of computer networks, encompassing basics, architectures, topologies, and communication aspects.
2. Explore varied computing models, from client-server to cloud paradigms, and understand their roles in modern IT.
3. Analyze major cloud providers, such as Google Cloud, Amazon Web Services, and IBM Cloud, evaluating their diverse services.
4. Assess prominent cloud solutions - Red Hat, Microsoft Azure, and Salesforce - gauging their capabilities in PaaS, IaaS, and SaaS contexts.

CO. No.	Upon the successful completion of the course, students will be able to	POs mapped	Cognitive Level
CO1	Develop a foundational grasp of computer networks, encompassing basics, architectures, topologies, and communication aspects.	P1	L1, L2
CO2	Explore varied computing models, from client-server to cloud paradigms, and understand their roles in modern IT.	PO1, PO2	L2, L3
CO3	Analyze major cloud providers, such as Google Cloud, Amazon Web Services, and IBM Cloud, evaluating their diverse services.	PO1, PO2	L2, L4
CO4	Assess prominent cloud solutions - Red Hat, Microsoft Azure, and Salesforce - gauging their capabilities in PaaS, IaaS, and SaaS contexts.	PO1, PO2, PO8	L2, L5

Mapping COs to POs: Alignment on a Three-Point Scale from Weak to Strong

CO	PO							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	1	2					3	3
CO2	1	1		3			3	3
CO3	1	1		2			3	2
CO4	1	1		2			3	1

COURSE 2A: CLOUD COMPUTING SERVICES

COURSE OUTCOMES

1. Understand Salesforce.com's ecosystem by exploring community resources, events, and collaborative approaches, and learn about its impact on industries and clients.
2. Explore different Salesforce.com clouds and gain an overview of Marketing Cloud, Sales Cloud, and Service Cloud in Salesforce.com, understanding their roles and key features.
3. Analyze the functional uses, advantages, and real-world examples of Heroku and Force.com clouds within Salesforce.com
4. Obtain a brief understanding of Wave Cloud, Thunder for IoT, and Collaboration Cloud in Salesforce.com and their contributions to data analytics, IoT, and collaboration.

CO. No.	Upon the successful completion of thecourse, students will be able to	POs mapped	Cognitive Level
CO1	Understand Salesforce.com's ecosystem by exploring community resources, events, and collaborative approaches, and learn about its impact on industries and clients.	PO1	L2, L3
CO2	Explore different Salesforce.com clouds and gain an overview of Marketing Cloud, Sales Cloud, and Service Cloud in Salesforce.com, understanding their roles and key features.	PO1, PO2	L1, L2
CO3	Analyze the functional uses, advantages, and real-world examples of Heroku and Force.com clouds within Salesforce.com	PO1, PO2	L2, L4
CO4	Obtain a brief understanding of Wave Cloud, Thunder for IoT, and Collaboration Cloud in Salesforce.com and their contributions to data analytics, IoT, and collaboration.	PO1, PO2, PO4	L2

Mapping COs to POs: Alignment on a Three-Point Scale from Weak to Strong

CO	PO							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	1	2					3	3
CO2	1	1		2			3	2
CO3	1	1		2			3	2
CO4	1	1		1		3	2	2

COURSE 3A: APPLICATION DEVELOPMENT ON CLOUD COMPUTING

COURSE OUTCOMES

1. Create applications, tabs, custom objects, fields, records, and manage data using Salesforce.com Classic Interface.
2. Understand and apply different relationships, including self, lookup, master-detail, many-to-many, rollup summary, and hierarchical relationships.
3. Design and utilize custom components, while adhering to the principles of effective Salesforce.com project design.
4. Manage data security, handle data migration using tools like Import Wizard and Data Loader, and configure schema, user, and organization security through profiles, roles, queues, and permission sets.
5. Develop communication templates, manage domains, design workflows, implement approval processes, and work with the Process Builder tool.

CO. No.	Upon the successful completion of thecourse, students will be able to	POs mapped	Cognitive Level
CO1	Create applications, tabs, custom objects, fields, records, and manage data using Salesforce.com Classic Interface.	PO1	L3
CO2	Understand and apply different relationships, including self, lookup, master-detail, many-to-many, rollup summary, and hierarchical relationships.	PO1, PO2	L2, L3
CO3	Design and utilize custom components, while adhering to the principles of effective Salesforce.com project design.	PO1, PO2	L2, L3
CO4	Manage data security, handle data migration using tools like Import Wizard and Data Loader, and configure schema, user, and organization security through profiles, roles, queues, and permission sets.	PO1, PO4	L2, L3, L4
CO5	Develop communication templates, manage domains, design workflows, implement approval processes, and work with the Process Builder tool.	PO1, PO8	L2, L3, L4

Mapping COs to POs: Alignment on a Three-Point Scale from Weak to Strong

CO	PO							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	1						3	2
CO2	1	1					3	2
CO3	1	1		1				
CO4	1			3		3	2	
CO5	1			3		3	2	1

COURSE 4A: BUSINESS INTELLIGENCE

COURSE OUTCOMES

1. Gain familiarity with Wave Analytics by exploring its features, setting up, and creating analytic apps.
2. Explore data using Wave Desktop's Data Explorer and Analyze Data Explorer and Explore data on mobile using the Mobile Data Explorer and the Mobile Exploration interface.
3. Understand and create a basic Wave App, configure licenses, and set permissions for accessing Wave apps.
4. Create and analyze a Sales Wave app using the Wizard and explore its mobile version.
5. Develop a Service Wave app using the wizard, apply it for managing service load, and customize basic aspects of a Wave dashboard.

CO. No.	Upon the successful completion of thecourse, students will be able to	POs mapped	Cognitive Level
CO1	Gain familiarity with Wave Analytics by exploring its features, setting up, and creating analytic apps.	PO1	L2, L3
CO2	Explore data using Wave Desktop's Data Explorer and Analyze Data Explorer and Explore data on mobile using the Mobile Data Explorer and the Mobile Exploration interface.	PO1, PO2, PO7	L2, L3
CO3	Understand and create a basic Wave App, configure licenses, and set permissions for accessing Wave apps.	PO1, PO8	L2, L3
CO4	Create and analyze a Sales Wave app using the Wizard and explore its mobile version.	PO1, PO8	L3, L4
CO5	Develop a Service Wave app using the wizard, apply it for managing service load, and customize basic aspects of a Wave dashboard.	PO1, PO2, PO8	L3, L4, L6

Mapping COs to POs: Alignment on a Three-Point Scale from Weak to Strong

CO	PO							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	1							
CO2	1	1		3		3	1	2
CO3	1			3			2	1
CO4	1			3			2	1
CO5	1	1		3		3	2	1

COURSE 5A: APEX AND VISUAL FORCE PROGRAMMING

COURSE OUTCOMES

1. Understand primitive and complex data types, expressions, and operators. Grasp OOP concepts of abstraction, encapsulation, inheritance, and polymorphism.
2. Gain proficiency in Apex core concepts, write code using Apex, and follow the cloud Apex Development process.
3. Utilize collections (List, Set, Map), perform DML operations (Insert, Update, Upsert, Delete, Undelete, Merge), handle execution flow, and implement exception handling in Apex.
4. Implement interfaces in Apex, work with triggers (syntax, context variables, validations, automations), and understand Batch Apex and Schedule Apex.
5. Introduce Visualforce, explore format tags, input tags, action tags, output tags, and miscellaneous tags. Work with custom controllers, standard controllers, and extensions.

CO. No.	Upon the successful completion of the course, students will be able to	POs mapped	Cognitive Level
CO1	Understand primitive and complex data types, expressions, and operators. Grasp OOP concepts of abstraction, encapsulation, inheritance, and polymorphism.	PO1, PO7	L2, L3
CO2	Gain proficiency in Apex core concepts, write code using Apex, and follow the cloud Apex Development process.	PO1, PO2	L2, L3
CO3	Utilize collections (List, Set, Map), perform DML operations (Insert, Update, Upsert, Delete, Undelete, Merge), handle execution flow, and implement exception handling in Apex.	PO1, PO8	L2, L3
CO4	Implement interfaces in Apex, work with triggers (syntax, context variables, validations, automations), and understand Batch Apex and Schedule Apex.	PO2, PO7, PO8	L2, L3, L4
CO5	Introduce Visualforce, explore format tags, input tags, action tags, output tags, and miscellaneous tags. Work with custom controllers, standard controllers, and extensions.	PO1, PO2, PO8	L2, L3, L4

Mapping COs to POs: Alignment on a Three-Point Scale from Weak to Strong

CO	PO							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	1	2					1	2
CO2	1	1					2	2
CO3	1	2		3			2	1
CO4	2	1					1	1
C05	1	1		3			2	1

COURSE 6A: SOAP INTEGRATION FOR SAAS

COURSE OUTCOMES

1. Understand the architecture of a WSDL document
2. Identify various elements in a SOAP message
3. Create SOAP based web services to integration
4. Use the SOAP services exposed by saleJorce.com for integration with on-premise clouds
5. Handle security management and session management in SOAP calls

CO. No.	Upon the successful completion of thecourse, students will be able to	POs mapped	Cognitive Level
CO1	Understand the architecture of a WSDL document	PO1	L2
CO2	Identify various elements in a SOAP message	PO1, PO2	L2, L4
CO3	Create SOAP based web services to integration	PO1, PO7	L2, L3, L4
CO4	Use the SOAP services exposed by saleJorce.com for integration with on-premise clouds	PO1, PO7	L2, L3
CO5	Handle security management and session management in SOAP calls	PO1, PO8	L2, L3

Mapping COs to POs: Alignment on a Three-Point Scale from Weak to Strong

CO	PO							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	1	2						
CO2	1	1		3				
CO3	1	2		2		3	1	
CO4	1	2		2		3	1	
CO5	1	2		2		3		1

COURSE 7A: REST INTEGRATION FOR SAAS

COURSE OUTCOMES

1. Learn about Force.com REST API, REST resources, WADL structure, and techniques like compression, conditional requests, and CORS.
2. Obtain a Salesforce Developer Edition organization, configure authorization, and practice sending HTTP requests using tools like Curl.
3. Utilize Workbench for Salesforce tasks, gather information about your organization, and manage object metadata.
4. Work with records, perform searches and queries, access recently viewed information, and manage user passwords.
5. Understand working with approval processes and process rules, utilize event monitoring, and learn to use composite resources.

CO. No.	Upon the successful completion of the course, students will be able to	POs mapped	Cognitive Level
CO1	Learn about Force.com REST API, REST resources, WADL structure, and techniques like compression, conditional requests, and CORS.	PO1, PO2	L2
CO2	Obtain a Salesforce Developer Edition organization, configure authorization, and practice sending HTTP requests using tools like Curl.	PO1, PO2, PO7	L2, L3
CO3	Utilize Workbench for Salesforce tasks, gather information about your organization, and manage object metadata.	PO1, PO7, PO8	L2, L3
CO4	Work with records, perform searches and queries, access recently viewed information, and manage user passwords.	PO1, PO8	L2, L3
CO5	Understand working with approval processes and process rules, utilize event monitoring, and learn to use composite resources.	PO1, PO2, PO7	L2, L3

Mapping COs to POs: Alignment on a Three-Point Scale from Weak to Strong

CO	PO							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	1	1		3			2	2
CO2	1	1		3			1	2
CO3	1			3			1	1
CO4	1			3			2	1
CO5	1	1		3			1	2