

Branch Name:	BCA (Bachelor of Computer Applications)
Program Code:	CS101
Course Title:	Implementing Cloud Security
Course Code:	18-CAE406-4C
Pre-requisite Course:	Fundamentals of Cloud Computing.

Course Objective:

1. To understand practical implementation of cloud security concepts
2. To apply security techniques using tools and MS Excel
3. To introduce real-world cloud threats and solutions
4. To enable students from commerce/arts background to analyze security data

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)								
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory				Practical				Total
				University Assessment		Continuous Assessment		University Assessment		Continuous Assessment		
				Min. Marks	Max. Marks	Min. Marks	Max. Marks	Min. Marks	Max. Marks	Min. Marks	Max. Marks	
2	-	4	4	9	25	9	25	9	25	9	25	100

Course Contents:

Sr. No	Topic	Total Hours	Weightage (%)
1	Introduction to Cloud Security • Cloud computing basics • Security challenges in cloud • Shared responsibility model • Types of cloud (IaaS, PaaS, SaaS)	12	20
2	Identity and Access Management (IAM) • User authentication & authorization • Multi-factor authentication (MFA) • Role-based access control (RBAC) • Password policies	12	20
3	Data Security & Encryption • Data protection in cloud • Encryption basics (at rest & in transit) • Backup and recovery • Data leakage prevention	18	20
4	Network Security in Cloud • Firewalls and security groups • VPN basics • Network monitoring • Intrusion detection basics	18	20
5	Cloud Monitoring & Risk Analysis using MS Excel • Log data analysis • Risk assessment using Excel • Security metrics • Incident tracking	20	20

Course Learning Outcomes (CLO):

At the end of this course, the student would be able

- CLO.1 Understand cloud security concepts
- CLO.2 Apply IAM and data protection methods
- CLO.3 Analyze security logs using Excel
- CLO.4 Perform risk assessment
- CLO.5 Develop simple security dashboards

List Text Book:

1. Cloud Security Basics – Simplified Edition
2. Fundamentals of Cloud Computing – Rural-friendly version

List of Reference Book:

1. Cloud Security and Privacy – Tim Mather
2. Cloud Computing Concepts Technology & Architecture – Thomas Erl
3. Cyber Security Essentials

E-Resource / Web Links:

1. Amazon Web Services – Cloud security basics
2. Microsoft Azure – Security learning
3. Google Cloud – Free training modules
4. <https://nptel.ac.in>
5. <https://www.coursera.org>

List of Experiments:

Note: The experiment list provided beneath is for reference only. The course teacher may change/formulate it as per his/her methodology and requirement.

1. Create student data sheet
2. Apply sorting and filtering
3. Use SUM and AVERAGE
4. Risk classification using IF
5. Count values using COUNTIF
6. Lookup data using VLOOKUP
7. Create bar chart
8. Data cleaning exercise
9. Simple dashboard
10. Mini project: Security awareness report

Mapping of CLO with PO and PSO

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)			
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4
CLO1			M	H		M									M	
CLO2		H			M	H		H					H		H	
CLO3		M				H	M						M			
CLO4			H				M	H						H		
CLO5					M	H			M	M			H		H	

H:High, M:Medium, L:Low