

DEPARTMENT OF INFORMATION TECHNOLOGY & COMPUTER ENGINEERING



LESSON PLAN

SUBJECT: CLOUD COMPUTING

BRANCH: 6TH SEM, IT

FACULTY NAME: MR. SABYASACHI SARANGI

Jharsuguda Engineering School, Jharsuguda

Vision:

To focus on development of skilled and confident personalities of today and tomorrow by using cutting edge technology in the department of Information Technology to accept need based challenges with a sense of social responsibilities.

Missions:

- **M1:** To impart quality education by implementing state-of- the- art teaching-learning methods to enrich the academic competency, credibility and integrity of the students.
- **M2:** To implement the educational program in our department from fundamental engineering to recent technology as per emerging trends in the field of Information Technology.
- **M3:** To facilitate a conducive ambience and infrastructure to develop professional skills and nurture innovation in students.
- **M4:** To inculcate sensitivity towards society, respect for environment and promote high standards of ethics.

Program Educational Objectives (PEOs):

- **PEO1:** Inculcate a conviction to believe in self, impart professional and ethical attitude, nurture to be an effective team member, infuse leadership qualities, build proficiency in soft-skills, and the ability to relate Engineering with social issues.
- **PEO2:** Adapt state-of-the-art Information Technology broad-based techniques to work in multi-disciplinary work environments.
- **PEO3:** Solve real world problems individually and as a team member with managerial and leadership skills for career in IT industry and also starting up own firms.
- **PEO4:** Undertake and excel in higher studies and Research & Development in IT related fields and management.

Program Specific Outcomes (PSOs):

- **PSO1:** Have the ability to analyze problem, design algorithm, identify and define the computing requirements appropriate to its solution and implement the same.
- **PSO2:** Apply the acquired knowledge and adapt modern tools to provide the innovative solutions in Networking, cloud computing and Cyber Security applications.
- **PSO3:** Maintain information systems using modern information and communication technologies which use the concept & tools of databases, data mining and information coding and deliver technological solutions for the end users.
- **PSO4:** Design; implement software solutions for various automation applications by applying standard practices for software project development using hands-on programming skills for analysis, design and creation of software solutions.

JES, JHARSUGUDA

Lesson Plan

Name	SABYASACHI SARANGI	Total Hrs planned:60 TotalHrsperweek:04
Designation	PTGF	Prerequisite:
Subject: Code/Name	TH3	Cloudcomputing
Semester/Programme/ Department	6 th Sem/Session (2025-2026)/Diploma/InformationTechnology	
Course Objective	<p>Understandthebasicconceptsofcloudandcloudarchitecture. Learn about different cloud computing technology.</p> <ul style="list-style-type: none">• Learnabouttheservicelevelsfor cloudapplications.• Providesapracticalexposuretoprofessionalsintendingto work in cloud computing environment.Understandthemapreducemodelandits application•Learnaboutbasicconcepts of softwareproductivity in acloud•Understandwebservicesandplatforms	

JES, JHARSUGUDA

Sl.No	DetailDescriptionofTopics/Subtopics	Modeof Lecture
1	Chapter1:“IntroductionToCloudComputing”Cloud Computing	Chalk&talk
2	Historicaldevelopment	Chalk&talk
3	VisionofCloudComputing	Chalk&talk
4	CharacteristicsofCloudcomputing	PPT
5	CloudcomputingReferencemodel	PPT
6	Cloudcomputingenvironment	NPTEL VIDEO
7	CloudServicerequirements	Questionnaires & ClassTest
8	CloudandDynamicInfrastructure	Chalk&talk
9	CloudAdoption	NPTEL VIDEO
10	Cloudapplications	Chalk&talk
11	RevisionofChapter1	NPTEL VIDEO
12	Chapter2: “CloudComputingArchitecture”Cloud Computing	Chalk&talk
13	IntroductionCloudComputingArchitecture	NPTEL VIDEO
14	CloudReferenceModel	Questionnaires & ClassTest
15	Typesof Clouds	Chalk&talk
16	CloudInteroperabilityandstandards	Chalk&talk
17	CloudcomputingInteroperabilityusecases	PPT
18	RoleofstandardsinCloudComputing environment	Chalk&talk
19	RevisionofChapter2	Chalk&talk
20	Chapter3: “ScalabilityandFaultTolerance”Cloud Computing	Chalk&talk
21	IntroductionScalabilityandFaultTolerance	NPTEL VIDEO
22	ScalabilityandFaultTolerance	Chalk&talk
23	Cloudsolutions	Chalk&talk

JES, JHARSUGUDA

24	CloudEcosystem	NPTEL VIDEO
25	CloudBusinessprocessmanagement	NPTEL VIDEO
26	PortabilityandInteroperability	Questionnaires & ClassTest
27	CloudServicemanagement	Chalk&talk
28	CloudOfferings	PPT
29	TestingunderControl	Chalk&talk
30	CloudserviceControls	Chalk&talk
31	VirtualdesktopInfrastructure	NPTEL VIDEO
32	RevisionofChapter3	NPTEL VIDEO
33		Questionnaires & ClassTest

JES, JHARSUGUDA

34	Chapter 4: Cloud Management and Virtualisation Technology–Cloud Computing	Chalk&talk
35	Create a virtualised Architecture	PPT
36	Data Centre	Chalk&talk
37	Resilience	NPTEL VIDEO
38	Agility	Chalk& talk
39	Cisco Data Centre Network architecture	Chalk&talk
40	Storage	Chalk&talk
41	Provisioning	Chalk&talk
42	Asset Management	Chalk&talk
43	Concept of MapReduce	Chalk&talk
44	Cloud Governance	NPTEL VIDEO
45	Load Balancing	NPTEL VIDEO
46	High Availability	NPTEL VIDEO
47	Disaster Recovery	NPTEL VIDEO
48	Revision of Chapter 4	NPTEL VIDEO
49	Chapter 5: Virtualisation–Cloud Computing	Questionnaires & Class Test
50	Virtualisation	Chalk&talk
51	Network Virtualisation	Chalk&talk
52	Desktop and Application Virtualisation	NPTEL VIDEO
53	Desktop as a service	Chalk&talk
54	Local desktop Virtualisation	PPT
55	Virtualisation benefits	Chalk&talk
56	Server Virtualisation	Questionnaires & Class Test
57	Block and File level Storage Virtualisation	Chalk&talk
58	Virtual Machine Monitor	Chalk&talk
59	Infrastructure Requirements	NPTEL VIDEO

JES, JHARSUGUDA

60	VLANandVSAN	PPT
61	RevisionofChapter 5	NPTEL VIDEO
62	Chapter6:CloudSecurity–CloudComputing	NPTEL VIDEO
63	CloudSecurityFundamentals	NPTEL VIDEO
64	Cloudsecurityservices	NPTEL VIDEO
65	DesignPrinciples	NPTEL VIDEO
66	SecureCloudsoftwarerequirements	Questionnaires & ClassTest
67	PolicyImplementation	Chalk&talk
68	CloudComputingSecurityChallenges	Chalk&talk
69	RevisionofChapter 6	Chalk&talk
70	Chapter7:“CloudComputingSecurity Architecture”–Cloud Computing	Chalk&talk
71	ArchitecturalConsiderations	Chalk&talk
72	InformationClassification	Chalk&talk
73	VirtualPrivateNetworks	Chalk&talk
74	PublicKeyandEncryptionKeymanagement	Chalk&talk
75	Digital certificates	Chalk&talk
76	Key management	Chalk&talk
77	MemoryCards	Chalk&talk
78	ImplementingIdentityManagement	Chalk&talk
79	ControlsandAutonomicSystem	Questionnaires & ClassTest
80	RevisionofChapter 7	Chalk&talk
81	Chapter8:“MarketBasedManagementofClouds”–Cloud Computing	Chalk&talk
82	CloudInformationsecurityvendors	Chalk&talk
83	CloudFederation,charactrization	Chalk&talk
84	CloudFederationstack	Chalk&talk
85	ThirdPartyCloud service	NPTEL VIDEO
86	Case study	NPTEL VIDEO
87	RevisionofChapter 8	Questionnaires

JES, JHARSUGUDA

		& Class Test
88	Chapter 9: "Hadoop" – Cloud Computing	Chalk & talk
89	Introduction	Chalk & talk
90	Data Source	NPTEL VIDEO
91	Data storage and Analysis	NPTEL VIDEO
92	Comparison with other system	Questionnaires & Class Test
93	Revision of Chapter 9	

BOOK

1. Cloud Computing; By: Pankaj Sharma, Katson Books
2. Cloud Computing; Dr. U.S. Pandey, Dr. Kavita Choudhary, S. Chand
3. Fundamentals of Cloud Computing; Prasant Kumar Pattnaik, Manas Ranjan Kabat, Souvik Pal, Vikas

Sabyasachi Sanyal
SUBJECT FACULTY

[Signature]
H.O.D

ACADEMIC COORDINATOR

PRINCIPAL