**JSPM Narhe Technical Campus**

**Department: MCA**

**Academic Year –2021-22**

**Teaching, Learning and Assessment tool Plan**

**Name of Faculty: - Prof. S.M.Deshmukh Subject:-Cloud Computing**

**Semester:I Year: 2022 Division: A Planned Duration: 45Hr**

**Course outcome:**

CO1: Describe the concepts of Cloud Computing and its Service Models& Deployment Models. (Understand)

CO2: Classify the types of Virtualization. (Understand)

CO3: Describe the Cloud Management and relate Cloud to SOA. (Understand)

CO4: Interpret Architecture and Pharrell Programing of Cloud Computing. (Apply)

CO5: Demonstrate practical implementation of Cloud computing. (Apply)

**Unit - 1** Cloud Services and Cloud Models

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| Sr. No | Content | Planned Date | Actual Date | Course outcome to fulfill | Teaching model | Teaching activity | Teaching material | References | Student activity | Student Learning material | Assessment tool |
| 1 | Discuss about Course objective & outcomes Introduction to Cloud , Cloud Computing vs. Cluster Computing vs. Grid Computing | 16-11-2021 |  | CO-1 | Inductive thinking & concept attainment Model | Direct instructions | Notes | R-1 | Reading Notes | Notes | Feedback |
| 2 | Introduction to Cloud Service Models , Characteristics, Advantages, Security | 19-11-2021 |  | Inductive thinking Model | Direct instructions | Notes | Reading Notes | Notes | Feedback |
| 3 | XAAS- Anything as a Service – Storage as a service, Network as a Service, Database as a Service etc | 22-11-2021 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes | R-1 | Reading Notes | Notes | Feedback |
| 4 | IAAS, PAAS, SAAS characteristics, benefits and Applications , Comparison of SAAS, PASS and IAAS | 23-11-2021 |  | Inductive thinking Model | Direct instructions | Notes |  | Reading Notes | Notes | Feedback |
| 5 | Cloud Deployment Models-Public, Private, Hybrid | 26-11-2021 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes | R-1 | Reading Notes | Notes | Feedback |
| 6 | Cloud Platforms, Google Cloud Platform, | 29-11-2021 |  | Inductive thinking Model | Direct instructions | Notes |  | Reading Notes | Notes | Feedback |
| 7 | Microsoft Azure, SalesForce, AWS. | 30-11-2021 |  | Inductive thinking Model | Direct instructions | Notes |  | Reading Notes | Notes | Feedback |

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| **Unit - 2 -** Virtualization | | | | | | | | | | | |
| Sr. No | Content | Planned Date | Actual Date | Course outcome to fulfill | Teaching model | Teaching activity | Teaching material | References | Student activity | Student Learning material | Assessment tool |
| 1 | Introduction to Virtualization concept & | 3-12-2021 |  | CO-2 | Inductive thinking & concept attainment Model | Direct instructions | Notes, | R-2 | Reading Notes | Notes,Assignments | Feedback |
| 2 | Hypervisors | 6-12-2021 |  | Inductive thinking | Direct instructions | Notes, youtube | Reading Notes | Notes | Feedback |
| 3 | Types of Virtualization: Server, Storage and Network | 7-12-2021 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos | Reading Notes | Notes,Assignments | Feedback |
| 4 | Pros and Cons of Virtualization | 10-12-2021 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos | Reading Notes | Notes,Assignments | Feedback |
| 5 | Machine Image, Virtual Machine (VM) | 13-12-2021 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos |  | Reading Notes | Notes,Assignments | Feedback |
| 6 | Technology Examples , Xen: Para virtualization | 14-12-2021 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos |  | Reading Notes | Notes,Assignments | Feedback |
| 7 | VMware: Full Virtualization | 17-12-2021 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos |  | Reading Notes | Notes,Assignments | Feedback |
| 8 | Open Source Virtualization Manager | 20-12-2021 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos |  | Reading Notes | Notes,Assignments | Feedback |

**Unit - 3 -** SOA & Cloud Management

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| Sr. No | Content | Planned Date | Actual Date | Course outcome to fulfill | Teaching model | Teaching activity | Teaching material | References | Student activity | Student Learning material | Assessment tool |
| 1 | Definition of Service Oriented Architecture , Basic concepts of SOA | 21-12-2021 |  | CO-3 | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos | R-2 | Reading Notes | Notes | Feedback |
| 2 | Web Services: SOAP and REST | 24-12-2021 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos | Reading Notes | Notes,Assignments | Feedback |
| 3 | Web Services: REST | 27-12-2021 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos | Reading Notes | Notes,Assignments | Feedback |
| 4 | Cloud APIs (RESTful) | 28-12-2021 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos | Notes,Assignments | Feedback |
| 5 | Relating SOA and Cloud Computing. | 31-12-2021 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos | Notes,Assignments | Feedback |
| 6 | Cloud Availability | 3-1-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos |  |  | Notes,Assignments | Feedback |
| 7 | Cloud Governance | 4-1-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos |  |  | Notes,Assignments | Feedback |
| 8 | Service Level Agreement | 7-1-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos |  |  | Notes,Assignments | Feedback |

**Unit - 4 -** Multi Core Architecture

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| Sr. No | Content | Planned Date | Actual Date | Course outcome to fulfill | Teaching model | Teaching activity | Teaching material | References | Student activity | Student Learning material | Assessment tool |
| 1 | Cloud Computing Architecture | 10-1-2022 |  | CO-4 | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos | R-3 | Reading Notes | Notes | Feedback |
| 2 | Multi Core Architecture | 11-1-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos | Reading Notes | Notes,Assignments | Feedback |
| 3 | Multi Cloud Environment | 14-1-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos | R-3 | Reading Notes | Notes | Feedback |
| 4 | Parallel Programming | 17-1-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos |  | Reading Notes | Notes,Assignments | Feedback |
| 5 | Parallel Processing | 18-1-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos | R-3 | Reading Notes | Notes | Feedback |
| 6 | Edge Computing Concepts | 21-1-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes, youtube Videos |  | Reading Notes | Notes,Assignments | Feedback |

**Unit - 5 -** Moving Applications to the Cloud

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| Sr. No | Content | Planned Date | Actual Date | Course outcome to fulfill | Teaching model | Teaching activity | Teaching material | References | Student activity | Student Learning material | Assessment tool |
| 1 | Cloud Migration Strategies and Process | 24-1-2022 |  | CO-5 | Inductive thinking & concept attainment Model | Direct instructions | Notes,online tutorial | R-2 | Reading Notes | Notes,Assignments | Feedback |
| 2 | Issues in Inter Cloud | 25-1-2022 |  | Inductive thinking & concept attain. | Direct instructions | Notes,online tutorial | Reading Notes | Notes,Assignments | Feedback |
| 3 | Applications in the Clouds | 28-1-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes,online tutorial | R-2 | Reading Notes | Notes,Assignments | Feedback |
| 4 | Cloud Service Attributes | 31-1-2022 |  | Inductive thinking & concept attain. | Direct instructions | Notes,online tutorial |  | Reading Notes | Notes,Assignments | Feedback |
| 5 | Cloud Bursting, Data Migration in Cloud | 1-2-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes,online tutorial | R-2 | Reading Notes | Notes,Assignments | Feedback |
| 6 | 5 Quality of Services in cloud Computing | 4-2-2022 |  | Inductive thinking & concept attain. | Direct instructions | Notes,online tutorial |  | Reading Notes | Notes,Assignments | Feedback |

**Unit - 6 -** Cloud Security & Implementation of Cloud

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| Sr. No | Content | Planned Date | Actual Date | Course outcome to fulfill | Teaching model | Teaching activity | Teaching material | References | Student activity | Student Learning material | Assessment tool |
| 1 | Cloud Security Fundamentals | 7-2-2022 |  | CO-4 | Inductive thinking & concept attainment Model | Direct instructions | Notes,online tutorial | R-2 | Reading Notes | Notes,Assignments | Feedback |
| 2 | Cloud Security Architecture | 8-2-2022 |  | Inductive thinking & concept attain. | Direct instructions | Notes,online tutorial | Reading Notes | Notes,Assignments | Feedback |
| 3 | Cloud Computing Security Challenges | 11-2-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes,online tutorial | Reading Notes | Notes,Assignments | Feedback |
| 4 | Privacy and Security in Cloud | 14-2-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes,online tutorial | R-2 | Reading Notes | Notes,Assignments | Feedback |
| 5 | Privacy and Security in Cloud | 15-2-2022 |  | Inductive thinking & concept attain. | Direct instructions | Notes,online tutorial |  | Reading Notes | Notes,Assignments | Feedback |
| 6 | Identity Management and Access control Concepts | 18-2-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes,online tutorial |  | Reading Notes | Notes,Assignments | Feedback |
| 7 | Identity Management and Access control Concepts | 21-2-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes,online tutorial | R-2 | Reading Notes | Notes,Assignments | Feedback |
| 8 | Demonstrate the commercial cloud computing Infrastructures Computing | 22-2-2022 |  | Inductive thinking & concept attain. | Direct instructions | Notes,online tutorial |  | Reading Notes | Notes,Assignments | Feedback |
| 9 | Introduction to Dockers Container | 25-2-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes,online tutorial |  | Reading Notes | Notes,Assignments | Feedback |
| 10 | Case Study’s based on Cloud | 28-2-2022 |  | Inductive thinking & concept attainment Model | Direct instructions | Notes,online tutorial |  | Reading Notes | Notes,Assignments | Feedback |

Name and Signature: Faculty Program Coordinator HOD

Role: (Prepared By) (Reviewed by) (Approved by)

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Reference Books:

1. Cloud Computing Bible by Barrie Sosinsky, Wiley India Pvt. Ltd,

2. Cloud Computing : Automating the Virtualized Data Center

3. Cloud Computing by Dr. Kumar Saurabh ,Wiley–India

4. Cloud computing: A practical approach by Anthony T. Velte, Tata McGraw-Hill

5. Cloud Computing Concepts, Technology & Architecture by Thomas Erl, Zaigham Mahmood, and Ricardo Puttin

6. Mastering Cloud Computing by Rajkumar Buyya, Christian Vecchiola, S.Thamarai Selvi - McGraw Hill Education (India) Private Limited,

7. Cloud Computing Web –Based Applications that change the way you work and Collaborate Online by Michael Miller, Pearson

8. Cloud Computing for Dummies by Judith Hurwitz, Robin Bloor, Marcia Kaufman, FernHalper

Web Reference:

1. <http://www.cloudcomputingpatterns.org/>

2. <http://whatiscloud.com>

3. www.w3schools.com