

<b>Lesson Plan No. 1.1</b>	<b>Course Name: Cloud Computing</b>	<b>Course No.: MCSE21A</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>a. Understand the basic concept of cloud computing</li> <li>b. Understands the concept of virtualization</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>a. Projector, Slides</li> <li>b. Use of Nearpod tool for online quiz</li> </ul>
<b>Teaching Development</b>	<ol style="list-style-type: none"> <li>1) <b>Introduction</b> (5 minutes) <ul style="list-style-type: none"> <li>• Ask questions</li> <li>• what is virtualization?</li> <li>• Define virtualization as the process of creating a virtual representation of physical resources such as servers, storage devices, or networks.</li> </ul> </li> <li>2) <b>Development</b> (30 minutes) <ul style="list-style-type: none"> <li>• Provide step-by-step instructions for setting up a virtualization environment using a hypervisor such as</li> <li>• VMware Workstation or VirtualBox.</li> <li>• Demonstrate how to configure virtual machines, allocate resources, and manage virtual networks within the hypervisor.</li> </ul> </li> <li>3) <b>Exercise</b> (5 minutes) <ul style="list-style-type: none"> <li>• What is virtualization, and how does it differ from traditional IT infrastructure?</li> <li>• What are the primary benefits of virtualization for organizations?</li> </ul> </li> </ol>
<b>Closure</b>	<ol style="list-style-type: none"> <li>1. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</li> <li>2. Suggested Reading Book Title: "Mastering VMware vSphere 7" Author: Nick Marshall, Mike Brown, G. Blair Fritz, Ryan Johnson, and Ryan S. Ball Publisher: Packt Publishing Publication Date: July 2020</li> <li>3. Spend 5 minutes to wrap up and consolidate the learnings</li> </ol>
<b>Evaluation</b>	<ol style="list-style-type: none"> <li>1. Reflective Questions (What, why, Who?). Allow students to answer and discuss.</li> <li>2. Nearpod Quiz on COA</li> </ol> <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>

<b>Lesson Plan No. 1.2</b>	<b>Course Name: Cloud Computing</b>	<b>Course No.: MCSE21A</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ol style="list-style-type: none"> <li>Understand the concepts of Web Service-Oriented Computing (WSOC) and Utility-Oriented Computing (UOC).</li> <li>Recognize the importance and applications of WSOC and UOC in modern computing.</li> </ol>
<b>Teaching Aids (if any)</b>	<ol style="list-style-type: none"> <li>Projector, Slides</li> <li>Use of Nearpod tool for online quiz</li> </ol>
<b>Teaching Development</b>	<ol style="list-style-type: none"> <li><b>Introduction</b> (5 minutes) <ul style="list-style-type: none"> <li>Start the lesson by discussing the evolution of computing paradigms from traditional monolithic systems to distributed computing.</li> <li>Introduce Utility-Oriented Computing (UOC) as a paradigm focusing on the delivery of computing resources as utility services, akin to electricity or water supply.</li> <li>Explain the significance of WSOC and UOC in enabling scalability, interoperability, and efficiency in modern computing environments.</li> </ul> </li> <li><b>Development</b> (30 minutes) <ul style="list-style-type: none"> <li>Explore the principles and key components of Web Service-Oriented Computing</li> <li>Discuss the advantages of WSOC such as loose coupling, reusability, and platform independence.</li> </ul> </li> <li><b>Exercise</b> (5 minutes) <ul style="list-style-type: none"> <li>What is the fundamental concept behind Web Service-Oriented Computing, and how does it differ from traditional monolithic architectures?</li> <li>Define Utility-Oriented Computing and its relationship with cloud computing.</li> </ul> </li> </ol>
<b>Closure</b>	<ol style="list-style-type: none"> <li>Summarize the Lesson Learning Outcomes and get affirmation from students on these.</li> <li>Suggested Reading</li> <li>Title: "Service-Oriented Architecture: Concepts, Technology, and Design" Authors: Thomas Erl, Anne Thomas Manes, and others Publisher: Prentice Hall</li> <li>Spend 5 minutes to wrap up and consolidate the learnings</li> </ol>
<b>Evaluation</b>	<ol style="list-style-type: none"> <li>Reflective Questions (What, why, Who?). Allow students to answer and discuss.</li> <li>Nearpod Quiz on COA</li> </ol> <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



<b>Lesson Plan No. 1.3</b>	<b>Course Name: Cloud Computing</b>	<b>Course No.: MCSE21A</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>a) Understand the fundamental concepts of cloud computing, including infrastructure, platforms, and software as a service.</li> <li>b) Explore the process of application development for cloud environments, considering scalability, reliability, and security.</li> <li>c) Learn about infrastructure and system development methodologies tailored for cloud computing.</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>a. Projector, Slides</li> <li>b. Use of Nearpod tool for online quiz</li> </ul>
<b>Teaching Development</b>	<ol style="list-style-type: none"> <li>1) <b>Introduction</b> (5 minutes) <ul style="list-style-type: none"> <li>• Begin with an overview of cloud computing, explaining its definition and significance in modern computing.</li> <li>• Define the three primary service models in cloud computing: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS).</li> <li>• Discuss the benefits of cloud computing, such as scalability, cost-effectiveness, and on-demand resource provisioning.</li> </ul> </li> <li>2) <b>Development</b> (30 minutes) <ul style="list-style-type: none"> <li>• Explore the principles of building applications for cloud environments</li> <li>• Transition to infrastructure and system development methodologies tailored for cloud computing:</li> <li>• Infrastructure as Code (IaC): Explain the concept of defining infrastructure using code and tools like Terraform or AWS CloudFormation.</li> <li>• DevOps: Discuss the integration of development and operations teams to automate deployment, monitoring, and maintenance processes in cloud environments.</li> <li>• Containerization: Introduce containerization technologies like Docker and Kubernetes, highlighting their role in deploying and managing distributed applications.</li> </ul> </li> <li>3) <b>Exercise</b> (5 minutes) <ul style="list-style-type: none"> <li>• What are the key components of a cloud computing environment, and how do they differ from traditional on-premises setups?</li> <li>• What security considerations are important when building and managing cloud-based systems, and how can they be addressed effectively?</li> </ul> </li> </ol>
<b>Closure</b>	<ol style="list-style-type: none"> <li>1. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</li> <li>2. Suggested Reading Title: "Cloud Computing: Concepts, Technology &amp; Architecture" Authors: Thomas Erl, Ricardo Puttini, and Zaigham Mahmood</li> <li>3. Spend 5 minutes to wrap up and consolidate the learnings</li> </ol>

**Evaluation**

1. Reflective Questions (What, why, Who?). Allow students to answer and discuss.
2. Nearpod Quiz on COA

Spend 5 minutes to evaluate student assimilation of the lesson contents