

Lecture #0

CSE 423

Virtualization & Cloud Computing

LTP and Credit details

- LTP – 3 0 0 [Three lectures per week]
- Credits : 3

Course Outcomes



- CO1 :: illustrate the main aspects, key technologies and mechanisms of Virtualization technology
- CO2 :: examine the appropriate technologies, algorithms and approaches for the provisioning of various resources and implementation of cloud computing
- CO3 :: understand the main issues involved in cloud computing such as cloud architecture, capacity planning and service level agreement
- CO4 :: evaluate the economical cloud solution by considering appropriate cost estimation strategy and laws of cloudonomics.
- CO5 :: enumerate the core aspects of cloud security, privacy and reliable cloud environment
- CO6 :: understand the emerging technologies of cloud computing and how it bring changes in the traditional cloud computing models.

Program Outcomes Mapped

PO-1 Engineering knowledge :: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO-2 Problem analysis :: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO-3 Design/development of solutions :: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

Program Outcomes Mapped Contd..

PO-4 The engineer and society :: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO-5 Environment and sustainability :: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO-6 Communication :: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

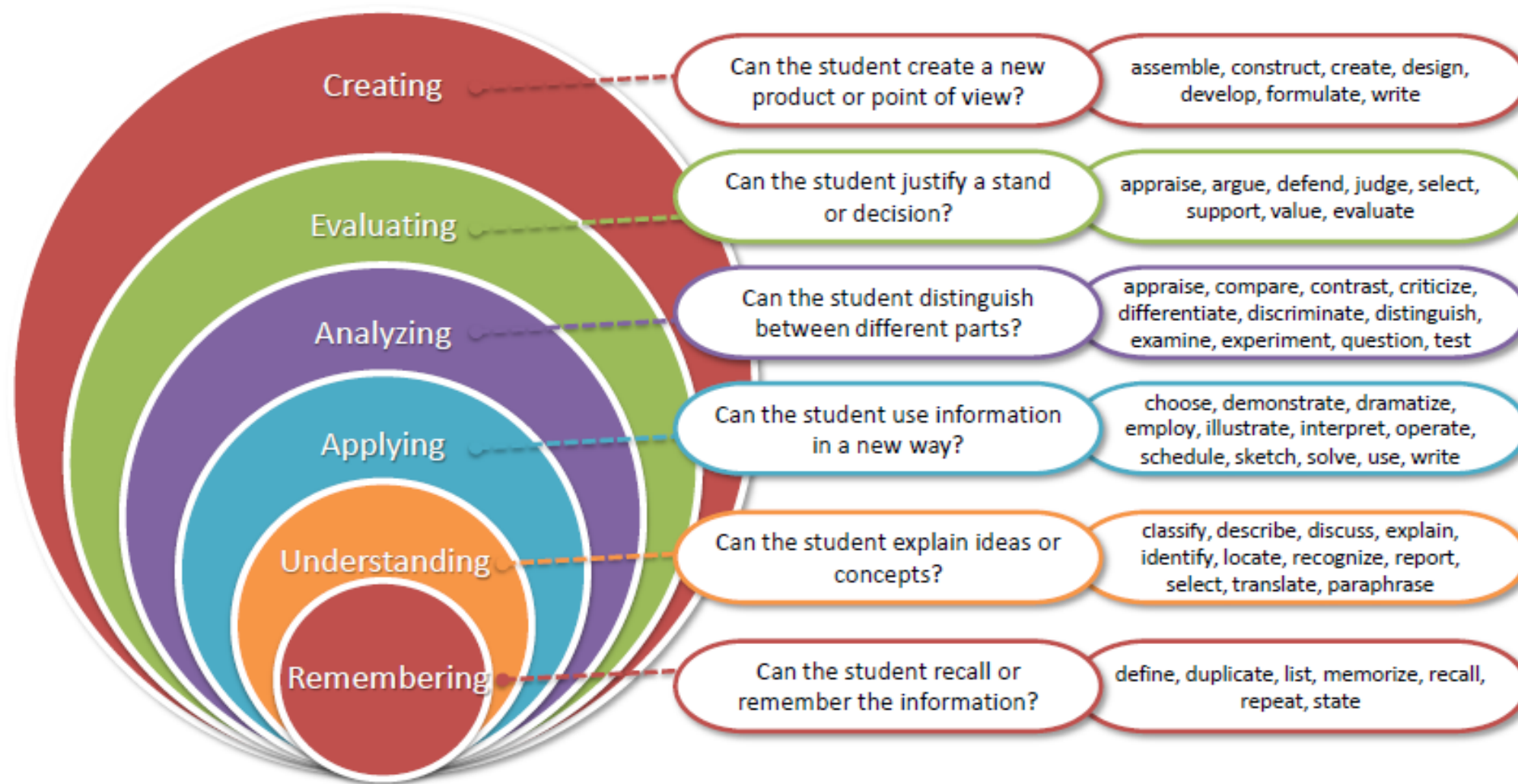
Program Outcomes Mapped Contd..

PO-7 Project management and finance :: Demonstrate knowledge and understanding of the engineering, management principles and apply the same to one's own work, as a member or a leader in a team, manage projects efficiently in respective disciplines and multidisciplinary environments after consideration of economic and financial factors.

PO-8 Life-long learning :: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PO-9 Competitive Skills :: Ability to compete in national and international technical events and building the competitive spirit

Bloom's Taxonomy



Contents

- ❖ Unit I
 - Virtualization Techniques
 - Overview of Distributed computing
- ❖ Unit II
 - Introduction to cloud computing
 - Migrating into a cloud
- ❖ Unit III
 - Understanding Cloud Architecture
- ❖ Unit IV
 - Cloud computing technologies and applications
 - Cloud Economics

Contents Contd..

❖ Unit V

- Cloud Security
- Cloud database

❖ Unit VI

- Container Technology
- Cloud Platforms in Industry
- Other aspects of cloud

Practical Applications

- Online Data storage
- Backup and Recovery
- Testing and Development
- E-commerce Applications
- Cloud computing in Education

Evaluation Criteria

- Class Participation 05
Includes---- Punctuality, Active participation/quick response in the class
- CA (Two best out of Three CA) 20
 - **CA consists of two MCQ based test and 1 term paper**
 - **CA1 ---MCQ Based**
 - **CA2---MCQ Based**

Relevant Resources

- <https://www.techtarget.com/searchcloudcomputing/definition/cloud-computing>
- <https://www.ibm.com/topics/cloud-computing>
- <https://www.geeksforgeeks.org/cloud-computing/>

Text Book

- Cloud Computing
(Fundamentals Industry Approach and Trends)
 - Rishabh Sharma
 - 1st Edition, Wiley India Pvt. Ltd.

Reference Books

- Mastering Cloud Computing
 - Rajkumar Buyya, Christian Vecchiola, S. Thamarai Selvi
 - 1st Edition, Mc Graw Hill
- Cloud Computing : A hands on approach
 - Arshdeep Bahga, Vijay Mediseti
 - 1st Edition, Universities Press Pvt. Ltd

Skill Set Attainment

- Knowledge of hypervisor tools
- Understanding Virtualization
- Understanding how to migrate the machines
- Knowledge of cloud computing
- Resource Planning

MOOCs

- **IBM Cloud Essentials**
- <https://www.edx.org/course/ibm-cloud-essentials>
- The certificate will be considered against the first CA