

Department Of Computer Science and Engineering
Kathmandu University
Dhulikhel, Kavre



Subject: Cloud Computing

Course: COMP 478

Level: B.E/B. Sc. 4th Year 1st Semester

Credit Hours: 3

Course Description: The main objective of this course is to provide an introduction to cloud computing. It also discusses the state of the art of cloud computing and related research areas.

Syllabus:

1. Introduction

- 1.1. Introduction to Cloud Computing
- 1.2. The evolution of Cloud Computing
- 1.3. State of Arts of Cloud Computing
- 1.4. Features of Cloud Computing
- 1.5. Challenges of Cloud Computing

2. Cloud Service Delivery Model

- 2.1. Introduction to types of Cloud Services
- 2.2. Software as a Service (SaaS)
- 2.3. Platform as a Service (PaaS)
- 2.4. Infrastructure as a Service (IaaS)
- 2.5. Other Services such as (DaaS, XaaS, etc)

3. Cloud Deployment Model

- 3.1. Introduction to Cloud Types
- 3.2. Private Cloud
- 3.3. Public Cloud
- 3.4. Hybrid Cloud
- 3.5. Community Cloud

4. Cloud Technologies

- 4.1. Introduction to Cloud Technology
- 4.2. Virtualization
- 4.3. Service-Oriented Architecture(SOA)
- 4.4. Cluster Computing
- 4.5. Grid Computing
- 4.6. Distributed Computing

5. Cloud Security

- 5.1. Introduction to Information Security
- 5.2. Cloud Security
 - 5.2.1. Infrastructure Security
 - 5.2.2. Data Security and Storage
- 5.3. Security Management in Cloud
- 5.4. Security -As -A Service

6. Cloud Performance

- 6.1. Service Availability
- 6.2. Reliability
- 6.3. Fault Tolerance

7. Introduction to Big Data and the Internet of Things (IoT)

- 7.1. Features of Big Data
- 7.2. Managing Big Data with Cloud Computing
- 7.3. Introduction to IoT
- 7.4. Relationship between IoT, Big Data and Cloud Computing

Reference Books

- 1. Furht Borko, *Handbook of Cloud Computing*, Springer, 2010, First Edition
- 2. Mather Tim, Kumarswamy Subra, Latif Sahid, *Cloud Security and Privacy*, O'Reilly, 2009, First Edition