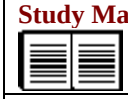
Unit: Introduction to Cloud Computing **Exam Paper No.:** 1	**Guided Learning Hours:** 200 **Number of Credits:** 20
Prerequisites: Basic technological knowledge and ability to work on own initiative	**Corequisites:** Internet technology.
Aim: The course introduces the core concepts of cloud computing enabling learners to gain the foundational knowledge required for understanding cloud computing technologies. The course outlines emerging trends, service/deployment models and cloud architecture. In order to be able to choose the best model, it is important to understand computing resources include networks, servers, storage, applications, and services. On top of this; there are essential characteristics, deployment models and service models. Learners need to be aware of key considerations related to cloud strategy; ranging from Software As A Service (SaaS), risk exposure and Infrastructure as a Service (IaaS).	
Required Materials: Recommended Learning Resources.	**Supplementary Materials:** Lecture notes and tutor extra reading recommendations.
Special Requirements: This is a hands-on unit, hence practical use of computers is essential. Requires intensive lab work outside of class time.	
Intended Learning Outcomes:	**Assessment Criteria:**
1. Understand the cloud computing concepts that guide organisations in creating/making decision on cloud strategy.	1.1 Define cloud computing. 1.2 Describe Infrastructure as a Service (IaaS). 1.3 Demonstrate how Platform as a Service (PaaS) works. 1.4 Describe Software as a Service (SaaS). 1.5 Describe virtualisation. Describe advantages and disadvantages of cloud computing. 1.6 Explore and analyse cloud service providers.
2. Understand emerging cloud computing technologies such as big data, analytics, artificial intelligence, internet of things and blockchain.	2.1 Describe cloud computing values to businesses. 2.2 Explain Internet of Things (IoT) and Artificial Intelligence (AI). 2.3 Describe blockchain and analytics on the cloud. 2.4 Describe big data technologies. 2.5 Be able to assess real life implementation of cloud computing technologies.
3. Understand the features and benefits of IaaS, SaaS and PaaS cloud models and how each is deployed.	3.1 Describe cloud provider responsibilities in delivering IaaS model. 3.2 Describe cloud provider responsibilities in delivering PaaS model. 3.3 Describe cloud provider responsibilities in delivering SaaS model. 3.4 Describe the components of the different cloud models. 3.5 Describe advantages and disadvantages of each of the different cloud models.

	Describe public could, hybrid and private.
4. Understand the cloud computing infrastructure architecture and security implications between cloud provider and cloud consumer.	4.1 Describe regions, zones and data centres. 4.2 Explore cloud computing resources. 4.3 Describe virtualisation and virtual machines. 4.4 Define containers.
5. Understand the different types of storage cloud, differences between them and the concept of content delivery networks.	5.1 Describe direct attached storage. 5.2 Define file storage. 5.3 Describe block storage. 5.4 Describe object storage. 5.5 Be able to compare and contrast the different storage technologies. 5.6 Describe content delivery network.
6. Understand the future trajectory of cloud computing and trends that shape growth, development and transformation.	6.1 Describe serverless computing. 6.2 Explore distributed and decentralised applications. 6.3 Describe Machine Learning (ML). 6.4 Define microservices. 6.5 Explain hybrid multi-cloud.
Methods of Evaluation: A 2½-hour written examination paper with five essay questions, each carrying 20 marks. Candidates are required to answer all questions. Candidates also undertake coursework/projects in Introduction to Cloud Computing.	

Recommended Learning Resources: Introduction to Cloud Computing

Text Books	• IoT and Edge Computing for Architects by Perry Lea. ISBN-13 : 978-1839214806 • Mastering the Public Cloud by Oliver Surdival. ISBN-13 : 979-8630593238 • Cloud Computing by Dan C. Marinescu. ISBN-13 : 978-0323852777
Study Manuals 	BCE produced study packs
CD ROM 	Power-point slides
Software 	N/A