National Institute of Posts, Telecoms and ICT
Cloud Computing

1. Course Information

Course Title	Cloud Computing		
Department	Computer Science	Instructor	Lect. CHEA Chandara T.A. C.S. Manith
Hours	30h	Telephone	(+855) 11 263 777
Credit	2	Email	manith.chhuon@niptict.edu.kh
Academic year	Term-6:2021	Office Hour	8:00-12:00 and 13:00-17:00
Learning outcomes	1. Understand how Cloud Computing works 2. Understand how the Cloud service models works 3. Understand how the Cloud deployment models works 4. Understand how virtualization technology works 5. AWS Amazon Webservices		
Learning Level	1. Remembering ☐ 2. Understanding ☑ 3. Applying ☑ 4. Analyzing ☐ 5. Evaluating ☐ 6. Creating ☑		
Teaching Strategy	Class will follow blended learning by : 1. Online course materials will be provided in advance to study before class. 2. Students must watch videos and read from material provided before class starts. 3. Students will get assignments such as practical work, research on specific topics and do the short presentation. 4. Students will work on a project and present their work at the end of the term.		
Class Prerequisite	To fully grasp the courses, students are required to have knowledge on: 1. Operating system 2. Web server		
Class Material	The following tools and libraries will be used in teaching and practice session:		

	1. Browser 2. AWS 3. Google classroom, Google Hangout, Google meet 4. Visa or mastercard (Virtual)	
Assessment	Attendance	5%
	Quiz	20%
	Lab	15%
	Assignment	10%
	Project	20%
	Final Exam	30%

1. Course Plan

Week (5H)	Chapter/Module	Content	Learning/Description	Activity
1	Introduction to Cloud Computing	1. Before Cloud Computing 2. What is Cloud Computing 3. Benefits of Cloud Computing 4. Cloud Computing deployment models 5. Cloud Computing Service model 6. Who uses Cloud Computing	- Student will know what is cloud computing - Understand the benefits of using cloud - Know the type of cloud deployment - Understand all kinds of cloud service models	1. Watching Video 2. Quiz will be take place before lab class start
2	Cloud security Mechanisms	1. Encryption 2. Hashing 3. Digital Signature 4. Public Key Infrastructure (PKI) 5. Identity and Access Management (IAM) 6. Cloud-Based Security Groups 7. Single Sign On	- Understand about type security in cloud - How Encryption work - Understand how Hashing perform - Understand about public key Infrastructure - Understand about Single sign on	1. Watching Video 2. Quiz will be take place before lab class start

		(SSO)		
3	AWS	1. Introduction to AWS 2. AWS Global Infrastructure 3. AWS Shared Responsibility Security Model 4. Identity and Access Management 5. Elastic Compute Cloud (EC2)	- Understand about public cloud - Understand AWS Infrastructure - Understand AWS security model - Understand Access management in AWS - Apply AWS in practical work	1. Watching Video 2. Quiz will be take place before lab class star 3. Create an account for AWS as a team.
4	AWS	1. Elastic Beanstalk (EBS) 2. Amazon S3 3. DynamoDB 4. RDS 5. Cloudwatch 6. Cloudformation	- Understand how to deploy and scaling web application - Understand how to use amazon storage by web service interface. - Understand about amazon relational database - Understand about amazon cloudwatch - Understand about aws cloudformation	1. Watching Video 2. Quiz will be take place before lab class star
Project Presentation				
5	Emergent Trends and Practices	1. Microservices 2. Cloud Native Application and Containerization	- Understand what is microservices - Understand how microservices work - Understand how to use docker - Apply docker in practical work	1. Watching Video 2. Quiz will be take place before lab class star
6	Emergent Trends and Practices (Continue)	1. Devops 2. Application Modernization	- Understand what is devops - Apply devops in practical work - Understand about application modernization	1. Watching Video 2. Quiz will be take place before lab class star

Project:

Week (4-5	After understanding how to set up AWS. Students need hosting website by configure the server in AWS

H)	