

## Cloud Computing **Midterm Exam Topics**

**Exam is onsite class time on 10/23 Sat.**

- Key concepts and algorithms from what we covered so far (Stay focused on major, key themes; omit advanced topics which we skipped in each chapter)
- Midterm Exam structure: About 7 questions - some may have 2 parts. Duration 2.5 Hours + 15 min break. Open Book, Open Notes. No programming questions or lab.
- All questions need to be answered. Some questions may have two parts (Part a and b).
- Each question should take you about 15 minutes to answer.

These will be short concepts, short algorithms, and application via simple calculations, and questions to explain concepts to demonstrate your understanding.

Detailed list of topics is as below.

### **From Lecture Module 1**

Study Chapters 1 and 2 of Bhagga & Madisetti, and Ch. 1 from Buyya.

Cloud Computing Basics: Characteristics, Basic Architecture, deployment models (IaaS etc.)

### **From Lecture Module 2**

Virtualization

Load balancers

What is a Private Cloud?

What is a Public Cloud?

Hybrid Cloud Architecture

Multicloud vs Hybrid Cloud

Cloud Migration

DHCP; VPC VPN; VLAN and Network ACL

### **From Lecture Module 3**

Web App development on cloud

Django framework for Web Apps

Design and Arch of Web Apps (SaaS) & Reference Arch

Multitenancy for SaaS (see Articles posted in Module 3)

A RESTful web API

Django Web Apps; AWS Web App deployment

### **From Lecture Module 4**

How Docker containers work

Web Services and Micro services

### Deploying Webservices

Directory Structure Of Java Web Applications

Deploying a Web Service (Dir Structure)

How do you deploy the JAR/WAR/EAR files onto a VM? (Cloud)

deploy a basic Java web App on AWS

Serverless and AWS Lambda Chapter 4 of textbook

How would the same work using serverless (Lambda)?

Serverless Overview

Deploying a Java web app in AWS

**From Lecture Module 5 and 6** (Text Chapters 5 and 6)

How storage works

NAS

Cloud Storage

Databases

NoSQL

Cloud DB

AWS SQL and NoSQL Datastores