ACC: ACC 3

ACC Bucket: Cloud Computing - 3

Course: Cloud Networking

OVERALL COURSE OBJECTIVES: Equip students with the knowledge and practical skills required to effectively grasp and engage in cloud networking and computing, and apply these principals and concepts into operational and project-based scenarios. Develop critical thinking and analytical skills to adapt to future advancements and requirements in the cloud computing landscape.

LEARNING OUTCOMES: On successful completion of the course the students shall be able to:

1. Comprehend the technological requirements and processes involved in cloud networking to enable cloud computing.
2. Analyze current practices in the field by engaging with industry experts, and understand futuristic developments that could shape the future of cloud networking.
3. Develop an understanding of how to build a network infrastructure that supports the deployment of virtual networks on a shared infrastructure and ensures efficient data transfer.
4. Recognize and implement strategies to achieve low latency communication and enable application federation across multiple regions.
5. Appreciate the design rationale and operational aspects of the existing networking systems, identifying the reasons behind their design and effectiveness.
6. Apply theories and techniques learned throughout the Cloud Computing Specialization in a hands-on Project Course, integrating previous knowledge and lessons from various computing and networking concepts and applications.

COURSE CONTENT:

Module 1: Cloud Networking [23 Hours]

This course will provide you a foundational understanding of machine learning models (logistic regression, multilayer perceptrons, convolutional neural networks, natural language processing, etc.) as well as demonstrate how these models can solve complex problems in a variety of industries, from medical diagnostics to image recognition to text prediction. In addition, we have designed practice exercises that will give you hands-on experience implementing these data science models on data sets. These practice exercises will teach you how to implement machine learning algorithms with PyTorch, open source libraries used by leading tech companies in the machine learning field (e.g., Google, NVIDIA, CocaCola, eBay, Snapchat, Uber and many more).

Sub-Topics
Applications running in Data Centers and the Traffic Patterns
Physical and Virtual Machines and Congestion Control.
Network Infrastructure in Cloud Data Centers
Inter-Data Center Networking

Formative Assessments:
5 quizzes and 3 coding/lab assignments.

Module 2: Cloud Computing Project [21 Hours]

Note: You should complete all the other courses in this Specialization before beginning this course. This six-week long Project course of the Cloud Computing Specialization will allow you to apply the learned theories and techniques for cloud computing from the previous courses in the Specialization, including Cloud Computing Concepts, Part 1, Cloud Computing Concepts, Part 2, Cloud Computing Applications, Part 1, Cloud Computing Concepts, Part 2, and Cloud Networking.

Formative Assessments:
2 peer-review assignments.

ASSESSMENT:

For summative assessments, Coursera will provide question banks for which exams can be conducted on the Coursera platform or the faculty will create their own assessments.

Note: If a Course or Specialization becomes unavailable prior to the end of the Term, Coursera may replace such Course or Specialization with a reasonable alternative Course or Specialization.