Diploma, Anna Univ UG & PG Courses

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CS8087 SOFTWARE DEFINED NETWORKS

DETAILED SYLLABUS

OBJECTIVES:

- To learn the fundamentals of software defined networks.
- To understand the separation of the data plane and the control plane.
- To study about the SDN Programming.
- To study about the various applications of SDN

UNIT I INTRODUCTION

History of Software Defined Networking (SDN) – Modern Data Center – Traditional Switch Architecture – Why SDN – Evolution of SDN – How SDN Works – Centralized and Distributed Control and Date Planes

UNIT II OPEN FLOW & SDN CONTROLLERS

Open Flow Specification – Drawbacks of Open SDN, SDN via APIs, SDN via Hypervisor-Based Overlays – SDN via Opening up the Device – SDN Controllers – General Concepts

UNIT III DATA CENTERS

Multitenant and Virtualized Multitenant Data Center – SDN Solutions for the Data Center Network – VLANs – EVPN – VxLAN – NVGRE

UNIT IV SDN PROGRAMMING

Programming SDNs: Northbound Application Programming Interface, Current Languages and Tools, Composition of SDNs – Network Functions Virtualization (NFV) and Software Defined Networks: Concepts, Implementation and Applications

UNIT V SDN

Juniper SDN Framework – IETF SDN Framework – Open Daylight Controller – Floodlight Controller – Bandwidth Calendaring – Data Center Orchestration

TEXT BOOKS:

1. Paul Goransson and Chuck Black, —Software Defined Networks: A Comprehensive Approach, First Edition, Morgan Kaufmann, 2014.

2. Thomas D. Nadeau, Ken Gray, —SDN: Software Defined Networks, O'Reilly Media, 2013.

REFERENCES:

1. Siamak Azodolmolky, —Software Defined Networking with Open Flow, Packet Publishing, 2013.

2. Vivek Tiwari, —SDN and Open Flow for Beginnersǁ, Amazon Digital Services, Inc., 2013.

3. Fei Hu, Editor, —Network Innovation through Open Flow and SDN: Principles and Design, CRC Press, 2014.