Code	Cloud Computing	2 Hours/Week	2 Units

Contents of Syllabus	Hours
❖ **Cloud Computing Overview**: ▪ Cloud Computing definition and characteristics. ▪ Cloud Computing and SOA. ▪ Enterprise Cloud drivers and adoption trends. ▪ Cloud reference architectures.	4
❖ **Infrastructure as a Service (IaaS):** ▪ Evolution of infrastructure migration approaches. ▪ Cloud Infrastructure services. ▪ IaaS vendor solutions. ▪ IaaS mainstream offerings.	4
❖ **Platform as a Service (PaaS):** ▪ Evolution of computing paradigms and related components e.g., Spring vs. VMWare vFabric, gemstone vs. VMWare Gemfire, WMWare Hyperic/TC Server/RabbitMQ. ▪ PaaS vendor solutions. ▪ PaaS mainstream offerings.	6
❖ **Software as a Service (SaaS):** ▪ Overview of the Cloud application development lifecycle. ▪ SaaS platforms. ▪ SaaS vendor solutions. ▪ SaaS mainstream offerings.	4
❖ **Business Process as a Service (BPaaS):** ▪ Overview of BPM on the Cloud and BpaaS sample solutions. ▪ BPaaS platform services. ▪ BPaaS vendor solutions: IBM, Dell. ▪ BPaaS mainstream offerings.	4
❖ **Cloud Security:** ▪ Cloud security challenges. ▪ Cloud security approaches. ▪ Cloud security in mainstream vendor solutions. ▪ Mainstream Cloud security offerings.	4

❖ **Enterprise Cloud-Based High Performance Computing (HPC) Applications:**
    ▪ Overview of High Performance Computing (HPC) on Cloud.
    ▪ Enterprises HPC applications.
    ▪ HPC Cloud vendor solutions.
    ▪ HPC on Cloud mainstream offerings.
	4

<u>**TextBook:**</u>
1. Borko Furht · Armando Escalante, Handbook of Cloud Computing, Springer New York Dordrecht Heidelberg London, 2010.