Second Year B.C.A. (Science) Semester IV

(To be implemented from Academic year 2017-18)

Course Code: BCA 407 **Course Title: Grid and Cloud Computing**
Total Contact Hours: 24 hrs. (30 Lectures) **Total Credits: 02**
Total Marks: 50 **Teaching Scheme: Theory- 03 Lect./Week**

Unit No.	Content	No.of Lectures
1	**Grid Computing – An overview** [Book 1] □ High-Performance Computing □ Cluster Computing □ Peer-to-Peer Computing □ Internet Computing □ Grid Computing - What Grid Computing Is, Peer-to-Peer Networks and Grid Computing, Cluster Computing and Grid Computing , Internet Computing and Grid Computing □ Grid Computing Models □ Open Grid Services Architecture □ Types of Grids - Departmental Grids, Enterprise Grids, Extraprise Grids, Global Grids, Compute Grids, Data Grids, Utility Grids □ Grid Networks -Grid Network Peering Points □ Grid Applications Characteristics	12
2	**Benefits of Grid Computing** [Book 2] □ Exploiting underutilized resources □ Parallel CPU capacity □ Virtual resources and virtual organizations for collaboration □ Access to additional resources □ Resource balancing □ Reliability □ Management	3
3	**Cloud Computing – A overview** [Book 3] □ Defining Cloud Computing □ The NIST model □ Deployment models – Public, Private, Hybrid □ Service models – Infrastructure as a Service (IaaS), Platform as a service (PaaS), Software as a Service (SaaS), Cloud reference model. □ Examining the characteristics of Cloud Computing □ Benefits of Cloud Computing	11

	• Disadvantages of Cloud Computing	
4	**Abstraction and Virtualization** [Book 3] • Using Virtualization Technology • Load Balancing and Virtualization – The Google Cloud • Understating Hypervisors – Virtual Machine types • Exploring SaaS – salesforce.com, PaaS- force.com, IaaS – Amazon EC2	4

Reference Books:

1) Grid Computing : A practical guide to technology and applications – Ahmar Abbas, Charles River Media Inc.
2) Introduction to Gird Computing – Bart Jacob, Michael Brown, Kentaro Fukui, Nihar Trivedi. IBM International Technical Support Organization. ibm.com/redbooks.
3) Cloud Computing Bible – Barrie Sosinsky. Willey India Edition.
4) Cloud Computing Principles and Paradigms- Rajkumar Buya, James Broberg, Andrzej Goscinski. Willey publication.
5) Grid Computing – Joshy Joseph, Craig Fellenstein, Pearson Education.