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| **Course Name:** | | | | | | | | Fundamentals of Cloud Computing | | | | | | | | | | | | | | | | | | | | | | | | | **Course Code:** | | | | | | | | | TBC 505(2) | | | |
|  | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | |  | | |
| **Course Name:** | | | | | | | | Bachelor of Computer Application | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | |  | | |
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| **1** | **Contact Hours:** | | | | | | | | | | 42 | | | |  | | | | | | | | | | | | | | | | | | | **L** | | 3 | | | **T** | | 0 | | **P** | 0 | |
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| **2** | **Examination Duration(Hrs):** | | | | | | | | | | | | | | | | | | | |  | **Theory** | | | | | 0 | 3 |  | **Practical** | | | | | 0 | | 0 | |  | | | | | |
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| **3** | **Relative Weightage:** | | | | | | | | | | | |  | | | | | **CWE:** | | | | | | | 25 | | **MTE:** | | | 25 | | **ETE:** | | | | 50 | | | |  | | | | |
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| **4** | **Credits:** | | | | | 0 | | | 3 | |  | | | | | | | | | | | | |  | | |  | | |  | |  | | | |  | | | |  | | | | |
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| **5** | **Semester:** | | | | | | **🗸** | | | |  | | |  | | |  | | |  | | |  | | | | | | | | | | | | | | | | | | | | | |
|  |  | | | | **Autumn** | | | | | | | **Spring** | | | | | | | **Both** | | | | | | |  | | | | | | | | | | | | | | | | | | |
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| **6** | **Pre-Requisite:** | | | | | | | | | | Introductory knowledge of networking and distributed systems. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **7** | **Subject Area:** | | | | | | | | | | Computer Application | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **8** | **Objective:** | | | | | | | | | **To introduce the students with the idea of cloud computing and its application** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **9** | **Course Outcome:** | | | | | | | | | | | | | A student who successfully fulfills the course requirements will be able to   * 1. Defineand differentiate between various Cloud deployment models.   2. Classify and demonstrate the use of various service models.   3. Describe and demonstrate the functionalities of various storage architectures.   4. Classify and interpret the concepts of virtualization.   5. Select vendors of a secure Cloud model based on requirements.   6. Define and examine the security concerns for cloud. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **10** | | **Details of the Course:** | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Unit No.** | | | | **CONTENT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **CONTACT HOURS** | | | | | | |
| **1** | | | | Cloud computing Fundamentals – Short history of cloud computing, CloudStorage, Pros and Cons of cloud computing, Benefits from cloudcomputing.Basic and Essential characteristic of cloud computing model.Use and application of Cloud computing. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **9** | | | | | | |
| **2** | | | | **Cloud Platform Architecture**: NIST cloud reference architecture, Cloud Computing and service Models: IAAS, PAAS, SAAS, Cloud Deployment models, public, private, hybrid and community models and their comparative study. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **8** | | | | | | |
| **3** | | | | **Storage Architectures:** Evolution of storage technology, storage models, file systems and database, distributed file systems, general parallel file systems. Google file system. Prevalent Storage technologies like DAS, RAID, NAS and SAN architectures, Data centers for Cloud Computing. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **8** | | | | | | |
| **4** | | | | **Virtual Machines and Virtualization :** Introduction, brief history of virtualization, Need for virtualization, Concept of hypervisor and its types, Virtualization architecture, pros and cons of virtualization, Types of Virtualization, Hardware Virtualization, Software Virtualization, Memory Virtualization, Storage Virtualization Network Virtualization | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **8** | | | | | | |
| **5** | | | | **Security Recommendations and Software Environments:**  Cloud Security Recommendations ,Virtualization Security Recommendations, Introduction to AWS, Key Amazon offerings, Google App Engine | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **8** | | | | | | |
|  | | | | **TOTAL** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **42** | | | | | | |
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| **11** | | **Suggested Books:** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | |
| **Sl. NO.** | | | **NAME OF AUTHERS/BOOKS/PUBLISHERS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **YEAR OF PUBLICATION** | | | | | |
| **1** | | | J. W. Rittenhouse and J. F. Ransome “Cloud Computing, Implementation, Management, and Security”, CRC Press. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2010 | | | | | |
| **2** | | | A. S. Tanenbaum,"Modern Operating Systems, 3rd Edition", by Andrew S. Tanenbaum, Prentice Hall. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2007 | | | | | |
| **3** | | | G. Reese, “Cloud Application Architectures", O.Reilly | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2009 | | | | | |
| **4** | | | D.S. Linthicum "Cloud Computing and SOA Convergence in Your Enterprise: A Step-by-Step Guide", Addison Wesley | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2009 | | | | | |