Government P.G. College, AmbalaCantt

# Course File(Session 2023-24)

# Name of Instructor :Mr. Ravi Juneja

# Class: B.A. 2nd Semester

# B.A. Hons English 2nd Sem

# B.A. Hons. Pol.Sc. 2nd Sem

# Subject Code:B23-SEC-201

# Subject Name:Cloud Computing Skills

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| **Session:2023-24** | | | | | |
| **Part A-Introduction** | | | | | |
| Subject | | COMPUTER SCIENCE | | | |
| Semester | | II | | | |
| Name of the Course | | **Cloud Computing Skills** | | | |
| Course Code | | B23-SEC-201 | | | |
| Course Type: (CC/MCC/MDC/CC- M/DSEC/VOC/DSE/PC/AEC/ VAC) | | SEC | | | |
| Credits | | Theory | Practical | Total | |
| 2 | 1 | 3 | |
| Contact Hours | | 2 | 2 | 4 | |
| **Max.Marks:75(50(T)+25(P))**  **Internal Assessment Marks:20(15(T)+5(P)) End Term Exam Marks: 55(35(T)+20(P))** | | | **Time:3Hrs.(T),3Hrs.(P)** | | |
| **PartB-ContentsoftheCourse** | | | | | |
| **Instructions for Paper-Setter**  Examiner will set a total of nine questions. Out of which first question will be compulsory. Remaining eight questions will be set from four unit selecting two questions from each unit. Examination will be of three-hour duration. All questions will carry equal marks. First question will comprise of short answer type questions covering entire syllabus.  Candidate will have to attempt five questions in all, selecting one question from each unit. First question will be compulsory. | | | | | |
| Practicum will be evaluated by an external and an internal examiner.Examination will be of  three-hour duration. | | | | | |
| **Unit** | **Topics** | | | | **Contact Hours** |
| I | Basic Concepts of Cloud Computing Computer Network Basics. Concepts of Distributed Systems. Concepts of Cloud Computing and its Necessity. Cloud Service Providers in use and their Significance. | | | | 6 |
| II | Cloud Infrastructure Cloud Pros and Cons. Cloud Delivery Models. Cloud Deployment Models. | | | | 6 |
| III | Cloud Storage Management Concept of Virtualization and Load Balancing. Overview on Virtualization used for Enterprise Solutions. Key Challenges in managing Information. Identifying the problems of scale and management in big data. | | | | 6 |
| IV | Building Cloud Networks Designing and Implementing a Data Center-Based Cloud Installing Open Source Cloud service. Amazon Web Services (AWS). Google Cloud Platform. | | | | 6 |
| V\* | Practicum:   * Creating & using Amazon(AWS) Account * Creating & using Google Account | | | | 25 |
| **Suggested Evaluation Methods** | | | | | |
| **InternalAssessment:**   * **Theory**   + Class Participation:4   + Seminar/presentation/assignment/quiz/classtestetc.:4   + Mid-Term Exam:7 * **Practicum**   + Class Participation:2   + Seminar/Demonstration/Viva-voce/Labrecordsetc.:3   + Mid-Term Exam: NA | | | | | **EndTermEx- amination:**  A three hour exam for both theory and practicum. |
| **PartC-Learning Resources** | | | | | |
| **RecommendedBooks/e-resources/LMS:**   * Cloud Computing:Concepts,Technology & Architecture By Thomas Erl,Ricardo * Cloud Computing a practical approach Anthony T.Velte,Toby J.Velte Robert Elsenpeter, TATA McGraw-Hill, New Delhi– 2010 * Cloud Computing:Web-Based Applications That Change the Way You Work and Collab- orate Online -Michael Miller-Que2008 * Moving to Cloud by Dinkar Sitaram,Geetha Manjunath,Publication:Syngress Elsevier Inc, 2014(2ndEdition) * Cloud Computing Second Edition by Dr Kumar Saurabh,Publication Willy INDIA (2013) * Cloud Computing Bible by Barrie Sosinsky,Publisher Willy INDAI(2014) * Cloud Computing for Dummies-Judith Hurwitz,Robin Bloor,Marcia Kaufman,Fern Halper, Wiley Publishing, Inc, 2010 * Cloud Computing(Principles and Paradigms),Edited by Rajkumar Buyya,James Broberg, Andrzej Goscinski, John Wiley & Sons, Inc. 2011 | | | | | |

**Course Objective**

* To provide students with the fundamentals and essentials of Cloud Computing.
* To provide students a sound foundation of the Cloud computing so that they are able to start using and adopting Cloud Computing services and tools in their real life scenarios.
* To enable students exploring some important cloud computing driven commercial systems and applications.
* To expose the students to frontier areas of Cloud Computing and information systems, while providing sufficient foundations to enable further study and research.

## COURSEOUTCOMES

After the successful completion of the course, students will be able:

* Explain the core concepts of the cloud computing paradigm: how and why this paradigm shift came about, the characteristics, advantages and challenges brought about by the various models and services in cloud computing.
* Apply the fundamental concepts in data centers to understand the tradeoffs in power, efficiency and cost.
* Identify resource management fundamentals, i.e. resource abstraction, sharing and sandboxing and outline their role in managing infrastructure in cloud computing.
* Analyze various cloud programming models and apply them to solve problems on the cloud.
* Get acquainted with the term Cloud Computing.
* Understand various types of free and commercial clouds.
* Understands various types of cloud services like SaaS. PaaS and IaaS.
* Know how the Cloud Computing is changing software industry.

# Lesson Plan

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| **Week**  **No** | **Scheduled Dates** | **Topics to be covered** |
| **1** | **15-17 February** | Basic Concepts of Cloud Computing Computer Network Basics. |
| **2** | **19-24 February** | Concepts of Distributed Systems. |
| **3** | **26-29 February** | Concepts of Cloud Computing and its Necessity. Cloud Service Providers in use and their Significance. |
| **4** | **1-2 March** | Revision and Practice; |
| **5** | **4-9 March** | Cloud Infrastructure Cloud Pros and Cons. Cloud Delivery Models. |
| **6** | **11-16 March** | I/O Devices, Input – Output parts of Desktop Computers, |
| **7** | **18-23 March** | Device Controller, Device Driver, Input Devices- Classification and Use |
| **8** | **1-6 April** | Cloud Deployment Models. |
| **9** | **8-13April** | Revision and Practice; |
| **10** | **15-20April** | Cloud Storage Management Concept of Virtualization and Load Balancing. |
| **11** | **22-29April** | Overview on Virtualization used for Enterprise Solutions. |
| **12** | **1-4 May** | Key Challenges in managing Information. Identifying the problemsof scale and management in big data. |
| **13** | **6-11 May** | Building Cloud Networks Designing and Implementing a Data Center-Based Cloud Installing Open Source Cloud service |
| **14** | **13-18 May** | Electronic mail- introduction , advantages and disadvantages |
| **15** | **20-25 May** | User ids, password, email addresses, message composition |
| **16** | **27-31 May** | Amazon Web Services (AWS). Google Cloud Platform. |
| **17** | **1-5 June** | Revision and Practice; |