# BCA COURSE PLAN

## VI$^{TH}$ SEM

GIRIDEEPAM INSTITUTE OF ADVANCED LEARNING
Affiliated to Mahatma Gandhi University, Kottayam

**Programme** : **BCA**

**Course** : **CA6CRT17 - CLOUD COMPUTING (Core)**

**Semester** : **6**

Name of the Faculty : Mr. Vinumon Jacob

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**Significance of the Course**

Cloud Computing has become a buzzword in the IT industry. Several IT vendors are promising to offer storage, computation and application hosting services. They offer subscription-based access to infrastructure, platforms, and applications, popularly termed IaaS (Infrastructure as a Service), PaaS (Platform as a Service), and SaaS (Software as a Service). These emerging services have reduced the cost of computation and application hosting by several steps. There exists several cloud technologies and platforms in the market and few of them included in this course i.e., Google AppEngine, Microsoft Assure, and Manjrasoft Aneka. Currently, expert developers are required to create cloud applications and services. Cloud researchers, practitioners, and vendors alike are working to educate potential users about the benefits of cloud computing and the best way to make full use of it. Salient features including cloud architecture, cloud applications, programming of clouds, and cloud platforms.

**Expected Course Outcomes (ECO):**

**On completion of the Course, it is expected that the student will be able to:**

**ECO 1**: Summarising the historical developments of cloud computing, platforms and technologies

**ECO 2**: Identifying pros and cons of virtualisation and technologies.

**ECO 3**: Describing the architecture of cloud computing and open challenges.

**ECO 4**: Applying cloud application platforms with Aneka clouds and MapRedue programming.

**ECO 5**: Explaining cloud platforms in industry and its built-in applications.

**Allocation of Sessions:**

| Module | 1 | 2 | 3 | 4 | 5 | Total |
|---|---|---|---|---|---|---|
| Sessions Allotted | 14 | 14 | 14 | 16 | 14 | 72 |

**Session Plan**

| **Module** | **Topics** | **CO Linkage** |
|---|---|---|
| **Module 1** | Introduction: Cloud Computing at a Glance, Historical Developments, Building Cloud Computing Environments, Computing Platforms and Technologies, Principles of Parallel and Distributed Computing: Eras of Computing, Parallel vs. Distributed Computing, Elements of Parallel Computing, Elements of Distributed Computing. | **CO 1** |

| **Learning Outcomes** | **Assessment** |
|---|---|
| 1. Explaining definition cloud computing and its historical developments.<br>2. Describing clod computing reference model and its environments.<br>3. Explaining computing platforms and technologies.<br>4. Comparing parallel and distributed computing.<br>5. Summarising clod computing as a glance. | **1)**Assignments<br>**2)** Interactive sessions<br>**3)** Test and Case Studies |

| Module | Topics | CO Linkage |
|---|---|---|
| **Module 2** | Virtualization: Introduction, Virtualization and Cloud Computing, Pros and Cons of Virtualization, Technology Examples. | **CO2** |

| Learning Outcomes | Assessment |
|---|---|
| 1. Identifying virtualization technologies.<br>2. Describing the confluence of several phenomena in Virtualization.<br>3. Explaining cloud computing and pros and cons of virtualization.<br>4. Identifying the disadvantages of vitalization.<br>5. Implementing technologies and virtualization solutions. | 1. Assignment<br>2. Quiz.<br>3. Discussion. |

| Module | Topics | CO Linkage |
|---|---|---|
| **Module 3** | Cloud Computing Architecture: Introduction, Cloud Reference Model, Types of Clouds, Economics of the Cloud, Open Challenges. | **CO3** |

| Learning Outcomes | Assessment |
|---|---|
| 1. Describing the cloud reference model.<br>2. Interpreting clod reference model to cloud computing architecture.<br>3. Comparing different types of clouds.<br>4. Describing open challenges of cloud computing. | 1. Interactive session<br>2. Quiz.<br>3. Seminar |

| Module | Topics | CO Linkage |
|---|---|---|
| **Module 4** | Aneka: Cloud Application Platform: Framework Overview, Anatomy of the Aneka Container, Building Aneka Clouds, Cloud Programming and Management, Data Intensive Computing: Map-Reduce Programming - What is Data-Intensive Computing?, Technologies for Data-Intensive Computing, Aneka MapReduce Programming. | **CO4** |

| Learning Outcomes | | Assessment |
|---|---|---|
| 1. Designing MapReduce programs in Aneka cloud application platform.<br>2. Identifying the framework and the anatomy of Aneka container.<br>3. Explaining cloud programming and management.<br>4. Describing ttechnologies for Data-Intensive Computing. | | 1. Discussion<br>2. Interactive session<br>3. Assignment |
| **Module** | **Topics** | **CO Linkage** |
| **Module 5** | Cloud Platforms in Industry: Amazon Web Services, Google AppEngine, Microsoft Azure, Cloud Applications: Scientific Applications, Business and Consumer Applications | **CO5** |
| **Learning Outcomes** | | **Assessment** |
| 1. Describing cloud platforms in industry.<br>2. Explaining Amazon Web Services and its ecosystem<br>3. Understanding Compute services and communication services.<br>4. Executing cloud application development and testing.<br>5. Implementing business and consumer application with CRM and ERP. | | 1. Discussion<br>2. Quiz<br>3. Test. |

**Reference Books**


1. RajkumarBuyya, Christian Vecchiola, S ThamaraiSelvi- Mastering Cloud Computing,Tata McGraw Hill Publications.

2. Kumar Saurabha, “Cloud Computing “Wiley Publication Krutz ,Vines “Cloud Security”.Wiley Publication.

3. A Srinivasan & J. Suresh “ Cloud Computing : A Practical Approach for learning and Implementation “ , First edition ,Pearson

GIRIDEEPAM INSTITUTE OF ADVANCED LEARNING
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**Programme** : **BCA**

**Course** : **CA6CRT18 -Mobile Application Development – Android**

**Semester** : **6**

Name of the Faculty : Jintu John

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**Significance of the Course**

This course introduces students to programming technologies, design and development related to mobile applications. This course includes accessing device capabilities, industry standards, operating systems, and programming for mobile applications using an OS Software Development Kit (SDK). After completing the course students should be able to create basic applications for mobile devices.

**Expected Course Outcomes (ECO):**

On completion of the Course, it is expected that the student will be able to:

**ECO 1**: Understanding the basic concepts and development kits of Java and android.
**ECO 2**: Identifying different components used in android user interface.
**ECO 3**: Understanding the activity life cycle and architecture of android.
**ECO 4**: Implementing database in android systems.
**ECO 5**: Familiarizing the basics of JSON.

**Allocation of Sessions:**

| Module | 1 | 2 | 3 | 4 | 5 | Total |
|---|---|---|---|---|---|---|
| Sessions Allotted | 10 | 16 | 14 | 16 | 16 | 72 |

**Session Plan**

| Module | Topics | CO Linkage |
|---|---|---|
| **Module 1** | Introduction to Android, Android Versions, Android Activity, Android Features and Architecture, Java JDK, Android SDK, Android Development Tools, Android Virtual Devices, Emulators, Dalvik Virtual Machine, Layouts – Linear, Absolute, Frame, Relative and Table. | **CO 1** |

| Learning Outcomes | Assessment |
|---|---|
| 1. Explaining different android versions and features.<br>2. Describing JDK and SDK<br>3. Explaining java virtual machine<br>4. Inferring emulators and virtual machines.<br>5. Summarising different layouts in android. | **1)** Assignments in related topics.<br>**2)** Interactive sessions and discussion.<br>**3)** Test |

| Module | Topics | CO Linkage |
|---|---|---|
| **Module 2** | Android User Interface- Fundamental UI design , User interface with View- Text View, Buttons, Image Button, Edit Text, Check Box, Toggle Button, Radio Button and Radio Group, Progress Bar, Auto complete Text View, Spinner, List View, Grid View, Image View, Scroll View, Custom Toast Alert and Time and Date Picker | **CO2** |

| Learning Outcomes | Assessment |
|---|---|
| 1. Explaining User Interface in JAVA<br>2. Designing an application using view.<br>3. Explaining different controls in android.<br>4. Describing views in android. | 1. Discussion.<br>2.Test<br>3.Assignment |

| Module | Topics | CO Linkage |
|---|---|---|
| **Module 3** | Activity - Introduction, Intent, Intent_filter, Activity Life Cycle, Broadcast Life Cycle, Services, multimedia-Android System Architecture, Play Audio and Video, Text to Speech. | **CO3** |

| Learning Outcomes | Assessment |
|---|---|

| | | |
|---|---|---|
| 1. Describing activities in android.<br>2. Exemplifying life cycles<br>3. Summarizing android system architecture.<br>4. Constructing an application to covert text to speech. | | 1. Assignment<br>2. Class test<br>3. Tutorials |
| **Module** | **Topics** | **CO Linkage** |
| **Module 4** | SQLite Database in Android- Introduction to SQLite Database, Creation and Connection of the Database, Extracting values from Cursors, Transactions, Telephoning and Messaging-SMS Telephony, Sending SMS, Receiving SMS, Wi-Fi Activity. | **CO4** |
| **Learning Outcomes** | | **Assessment** |
| 1. Applying SQLite database in android.<br>2. Constructing an application for sending messages. | | 1. Test<br>2. Assignment. |
| **Module** | **Topics** | **CO Linkage** |
| **Module 5** | Introduction to JSON and XML, Use of JSON, Syntax and Rule of JSON, JSON Name, JSON Values, JSON Objects, JSON Arrays, Parsing JSON and XML. Google Play services, Location services, Maps | **CO5** |

| **Learning Outcomes** | **Assessment** |
|---|---|
| 1. Explaining JSON and XML<br>2. Summarizing JSON objects and arrays.<br>3. Understanding google play services | 1. Test.<br>2. Assignment |

**Reference Books**

1. Prasanna Kumar Dixit - ANDROID, Vikas Publishing House.

2. Anubhav Pradhan, Anil Deshpande, Composing Mobile Apps using Android, Wiley India Pvt.Ltd, 2014

3. Kevin Grant and Chris Haseman, Beginning Android Programming – Develop and Design, Pearson.

GIRIDEEPAM INSTITUTE OF ADVANCED LEARNING
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**Programme** : **BCA**

**Course** : **CA6PET01 –DATA MINING**

**Semester** : **6**

Name of the Faculty : SARITHA N PILLAI

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**Course Objectives:**

This course provides the basic concepts of data mining and takes up their studies in the area of machine learning, artificial intelligence and data analytics.

**Expected Course Outcomes:**

On completion of the Course, it is expected that the student will be able to:

ECO 1: Understand the basics of data mining task primitives.

ECO 2: Design and classification of data warehouse.

ECO 3: Concepts of association and classification rules.

ECO 4: Understand cluster analysis and different clustering methods.

ECO 5: Mining of spatial data, multimedia, text and WWW.

**Allocation of Sessions**

| Module | 1 | 2 | 3 | 4 | 5 | Total |
|---|---|---|---|---|---|---|
| Sessions Allotted | 12 | 12 | 18 | 18 | 12 | 72 |

**Session Plan**

| **Module** | **Topics** | **CO Linkage** |
|---|---|---|
| **Module 1** | Introduction Data Mining, Data Ware House, Transactional Databases, Data Mining Functionalities Characterization and Discrimination, Mining frequent patterns, Association and correlation, Classification and Prediction, Cluster Analysis, Classification of Data Mining Systems, Data Mining Task Primitive, Integration of Data Mining systems, Major issues in Data Mining, Data integration and transformation,<br>Data reduction, Data discretization. | ECO-1 |
| **Learning Outcomes** | | **Assessment** |
| 1. Describe the different types of data.<br>2. Explain the data mining task primitives.<br>3. List the major issues in data mining | | 1. Test<br>2. Example<br>3. Explanation<br>4. Presentation |
| **Module** | **Topics** | **CO Linkage** |
| **Module 2** | Data Warehouse and OLAP technology Data Warehouse, Multidimensional data Model, Data warehouse architecture, Data Warehouse implementation, OLAP, Data Warehouse and data mining | ECO-2 |
| **Learning Outcomes** | | **Assessment** |
| 1. Outline the data warehouse operations.<br>2. Explain different features of data warehouse<br>3. Summarize the basic concepts and difference between OLAP and OLTP<br>4. Explain 3-Tier architecture. | | 1. Test<br>2. Example<br>3. Explanation<br>4. Presentation |

| Module | Topics | CO Linkage |
|---|---|---|
| **Module 3** | Association Rules and Classification Concepts Efficient and Scalable Frequent item set Mining methods, Mining various kind of association rules, from association mining to Co-relation analysis, Classification and prediction, Issues, Classification by Decision tree induction, Bayesian Classification, Rule-based classification, Support Vector Machines, Learning from your neighbours, Prediction | ECO-3 |
| **Learning Outcomes** | | **Assessment** |
| 1. Compare association rules and classification concepts.<br>2. Summarize classification methods and prediction | | 1.Test<br>2. Example<br>3. Explanation<br>4. Presentation |
| **Module** | **Topics** | **CO Linkage** |
| **Module 4** | Cluster Analysis Definition, Types of data in cluster analysis, A categorization major Clustering methods- Partitioning methods, K-means and k-medoids, from k-medoids to CLARANS, Hierarchical methods, Density based methods | ECO-4 |
| **Learning Outcomes** | | **Assessment** |
| 1.Explain types of data in cluster analysis<br>2.Compare Partitioning methods, K-means and k-medoids<br>3.Classify Hierarchical methods<br>4. Explain Density based methods | | 1.Test<br>2. Example<br>3. Explanation<br>4. Presentation |
| **Module** | Topics | **CO Linkage** |
| **Module 5** | Mining Complex Data Spatial Data Mining, Multimedia Data Mining, Text Mining and Mining WWW. | ECO-5 |
| **Learning Outcomes** | | **Assessment** |
| 1. Summarize Spatial Data Mining.<br>2. Explain Multimedia Data Mining.<br>3. Explain Text Mining.<br>4. Exemplify Mining WWW. | | 1.Explanation<br>2. Example<br>3.Presentation<br>4.Test |

**References Books**

1. Jiawei Han and Micheline Kamber - Data Mining - Concepts and Techniques,Second Edition, Elsevier, 2006

2. Witten and Frank - Data Mining Practical Machine Learning Tools and Techniques, Second Edition, Elsevier, 2005

3. Soman, Divakar and Ajay, Data Mining Theory and Practice, PHI, 2006

3. Margaret H Dunham- Data Mining –Introductory and Advanced Topics, Fourth Edition, Person 2006