



## Academic Year: 2023-24

### Skill Oriented Course-I

S.No.	Sem & Section	Title	Date (From -to)
1.	III SEM CST	AWS Cloud Computing + Hackathon	25/09/2023 -30/09/2023

### Skill Oriented Course-II

S.No.	Sem & Section	Title	Date (From -to)
1.	IV SEM CST	Data Analysis Using Python	12/02/2024 - 22/02/2024

### Skill Oriented Course-III

S.No.	Sem & Section	Title	Date (From -to)
1.	V SEM CST	ReactJS	03/10/2023 - 14/10/2023

### Skill Oriented Course-IV

S.No.	Sem & Section	Title	Date (From -to)
1.	VI SEM CST	Advanced Generative AI Boot Camp	02/01/2024 - 12/01/2024

### Skill Oriented Course-V

S.No.	Sem & Section	Title	Date (From -to)
1.	VII SEM CST	ANALYTICAL	12/06/2023 - 21/06/2023



## **AWS Cloud Computing + Hackathon**

**Course Outcomes:** After Successful completion of the Course, the student will be able to:

<b>CO1:</b> Discuss architecture of AWS.	[K2]
<b>CO2:</b> Illustrate VPC.	[K3]
<b>CO3:</b> Describe storage concepts.	[K2]
<b>CO4:</b> Explain database connectivity.	[K2]

### **Course Contents:**

<b>Introduction to AWS</b> <ul style="list-style-type: none"><li>• What is AWS ?</li><li>• What is Cloud ?</li><li>• What is Cloud Computing ?</li><li>• Benefits of Cloud Computing</li><li>• Types of Cloud Computing Companies using AWS infrastructure</li><li>• Why did companies start to use AWS ?</li></ul>
<ul style="list-style-type: none"><li>• AWS Services overview</li><li>• AWS Global Infrastructure</li><li>• AWS Pricing</li></ul> <b>Elastic Compute Cloud</b> <ul style="list-style-type: none"><li>• What is EC2 ?</li><li>• How did Elasticity property come to EC2 ?</li><li>• What is an Operating System ?</li><li>• Configuration terminology in AWS</li><li>• What is EBS &amp; it's types ?</li><li>• What are security groups ?</li></ul>
<ul style="list-style-type: none"><li>• What are Key pairs ?</li><li>• Launching Windows Instance</li><li>• Launching Linux Instance</li><li>• Launching Multiple instances using Single Security groups and key pairs</li><li>• Launching Web Server both Manually and Automatically</li><li>• Characteristics of ELB</li><li>• Practically proving all the characteristics of EL</li></ul>
<ul style="list-style-type: none"><li>• What is ASG ?</li><li>• Launching ASG</li><li>• What are Status Checks ?</li><li>• What are Volumes ?</li><li>• Protection from accidental termination</li><li>• Encryption</li><li>• Difference btw Scale - in, out &amp; Scale - up, down</li><li>• Copy of AMI from one region to another</li><li>• Copy of Snapshots</li></ul>
<b>Simple Storage Service</b> <ul style="list-style-type: none"><li>• What is S3 ?</li><li>• Characteristics of S3</li><li>• Features of S3</li><li>• S3 Tiered Storage Classes</li><li>• Life Cycle Management</li><li>• S3 Versioning</li><li>• S3 Policies</li><li>• S3 Pricing</li><li>• Transfer Acceleration</li><li>• Replication</li><li>• Static Web Hosting</li></ul>



**SRI VASAVI ENGINEERING COLLEGE (AUTONOMOUS)**

**PEDATADEPALLI, TADEPALLIGUDEM-534 101, W.G.Dist.**

**Department of Computer Science & Technology**

**Identity Access Management**

- IAM Users
- What are Groups?
- IAM policies & it's types
- Accessing AWS through CLI
- IAM Roles

**The workshop will be organized in the duration of 4 days and Hackathon of 24 Hours.**



## Data Analysis using Python

**Course Outcomes:** After Successful completion of the Course, the student will be able to:

- Construct programs for Data Analysis using NumPy and Pandas. (K3)
- Illustrate Data Acquisition and Wrangling. (K3)
- Construct programs using Advanced Data Analysis Techniques. (K3)
- Construct programs using Deep Learning for Data Analysis. (K3)
- Construct programs using Big Data Analysis with Python. (K3)

### **Course Contents:**

#### **Module 1: Python for Data Analysis**

- Core Python concepts review.
- Introduction to NumPy, Pandas, Matplotlib, Seaborn, and Jupyter notebooks.

#### **Module 2: Data Acquisition and Wrangling**

- Web scraping with BeautifulSoup and Selenium.
- Working with APIs.
- Data cleaning and transformation techniques.

#### **Module 3: Advanced Data Analysis Techniques**

- Statistical analysis with SciPy and statsmodels.
- Time series analysis and machine learning fundamentals.

#### **Module 4: Deep Learning for Data Analysis**

- Introduction to neural networks and deep learning architectures.
- TensorFlow or PyTorch for deep learning models.

#### **Module 5: Big Data Analysis with Python**

- Introduction to Big Data concepts.
- Distributed computing with Apache Spark and Hadoop ecosystems.

#### **Module 6: Professional Practices and Communication**

- Version control with Git.
- Best practices for writing clean Python code.
- Data storytelling and communication skills



## ReactJS

**Course Outcomes:** After successful completion of the course student will be able to learn:

<b>CO1:</b> Discuss fundamentals of HTML .	[K2]
<b>CO2:</b> Discuss CSS.	[K2]
<b>CO3:</b> Discuss Javascript.	[K2]
<b>CO4:</b> Discuss ReactJS.	[K2]
<b>CO5:</b> Develop an application using REACTJS.	[K3]

### **Course Contents:**

**SECTION 1:** Web Basics and HTML/CSS.

**SECTION 2:** JavaScript Fundamentals.

**SECTION 3:** Introduction to React, Building a basic React application.

**SECTION 4:** React Hooks, Context API, Custom Hooks, More complex React components.

**SECTION 5:** Building small projects using React.

**SECTION 6:** Making HTTP requests with Axios, React Router version 6, Building an API project with deployment.

**SECTION 7:** Building projects using external APIs, GitHub API project, E-commerce project.

**SECTION 8:** Introduction to Redux and Redux Toolkit, Building a project using Redux.

**SECTION 9:** Initial setup for a larger project, Creating a landing page and an error page.

**SECTION 10:** Implementing a register page, Setting up a dashboard and profile page, CRUD (Create, Read, Update, Delete) Operations.

**SECTION 11:** Building a full-stack app with Node.js and MongoDB, Introduction to React DevTools and debugging, Using Git for version control.



## Advanced Generative AI Boot Camp

**Course Outcomes:** After Successful completion of the Course, the student will be able to learn:

1. Describe advanced knowledge of generative AI models, with a focus on GANs, VAEs, and Transformers. [K2]
2. Develop practical skills through hands-on projects, including image synthesis, text generation, and reinforcement learning applications. [K3]
3. Apply generative AI techniques to real-world problems. [K3]
4. Develop generative AI projects in various domains. [K3]
5. Demonstrate insights into emerging trends, ensuring readiness for ongoing advancements in the field. [K3]

### **Course Contents:**

#### **1. Introduction to Advanced Generative AI**

- Overview of Generative AI applications
- Recap of basic generative models
- Discussion on recent advancements and use cases

#### **2. Advanced GANs and Project Kick-off**

- In-depth study of advanced GANs (e.g., StyleGAN, BigGAN)
- Hands-on: Implementing a custom GAN for image synthesis
- Project: Image synthesis with advanced GAN architecture

#### **3. Variational Autoencoders (VAEs)**

- Advanced concepts in VAEs
- Implementing VAEs for data generation
- Project: VAEs for image generation and manipulation

#### **4. Sequence Generation with Transformers**

- Understanding Transformers in Generative AI
- Building sequence generation models
- Project: Text generation using Transformer architecture

#### **5. Reinforcement Learning in Generative AI**

- Basics of reinforcement learning
- Applying RL to generative models
- Project: Reinforcement learning for generative art

#### **6. Final Project and Future Trends**

- Collaborative development of a sophisticated generative AI project
- Discussion on the latest trends and future directions
- Final project presentations and feedback



## ANALYTICAL

**Course Outcomes:** After successful completion of the Course, the student will be able to:

- Use their Logical thinking and analytical abilities to solve quantitative aptitude questions form Company specific and other competitive tests. [K3]
- Solve questions relative to Time & distance and time & work etc. from company specific. [K2]
- Solve puzzle related questions for any type of competitive tests. [K2]
- Practice the Aptitude Round Clearing ability in interview Process. [K3]
- Apply their knowledge of arithmetical ability in various day to day life problems quickly. [K3]

**Course Contents:**

- Number System
- Ages
- Average
- Boats and Streams
- Simple interest &Compound Interest
- H.C.F and L.C.M
- Mensuration
- Mixture and Allegations
- Partnership
- Percentage
- Permutations and Combinations
- Pipes and Cistern
- Probability
- Problems on Trains
- Profit and Loss
- Races and Games
- Ratio and Proportion
- Simple Interest
- Time and Work
- Time, Speed and Distance
- Chain Rule..
- Blood Relations
- Cause and Effect
- Calendar & Clock
- Coding and Decoding
- Cubes and Cuboids
- Direction Sense
- Letter and Number Series
- Odd Man Out Series
- Order and Ranking
- Seating Arrangement
- Syllogism
- Venn Diagrams